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Web Report on the Model Checking Contest @ Petri Net 2013

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The background of the cover is a complex, abstract composition. It features a dense arrangement of dark, metallic-looking gears of various sizes and orientations, some of which are partially obscured by large, angular, semi-transparent shapes in shades of orange, red, and yellow, resembling molten lava or fire. The overall effect is one of mechanical complexity and intense energy.

MODEL CHECKING CONTEST
@ PETRI NETS
REPORT ON THE 2013 EDITION

September 2013

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Report on the Model Checking Contest at Petri Nets 2013

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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 formulae, 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 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 one 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 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)
	GlobalResAlloc (Colored, 7 instances)
	GlobalResAlloc (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)
ResAllocation (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, 1000.

MAPK models a biological system: the Mitogen-Activated Protein Kinase Cascade [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, 1000, 5000, 10000, 50000, 100000. 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, 1000, 2000, 5000, 10000, 20000, 50000. 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 $(i - 1) \bmod (N)$. 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 servers. 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 multi-processor 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 $\{0, \dots, n - 1\}$. 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 with 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 **withdraws** its intent and goes back to **p0**. In **p1**, it **enters** 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 were 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 were 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 restored 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](http://www.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 $8 \times 8 \times 4$ 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 $k = \text{hash}(S)$ for the corresponding root node in the DHT) to perform a service. Once S has finished, S contact C (key $k' = \text{hash}(A + S)$ 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 “leafsets” 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 its 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. Rodriguez (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					State Space	
	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.
"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 the 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 from 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 compartments 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 EX-PSPACE 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 Processing¹⁰: 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: *BenchKit* [\[31\]](#). So, the MCC execution environment is now composed of *BenchKit* 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  $v \in \text{ScalingParameters}(M)$  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 were operated on the same host.

4.3 Involved Machines

Three computers were made available to operate the submitted tools by various institutions: cluster1¹¹, 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.e16.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 were allocated due to parallel experimentations.

The organizers thank the Universities of Paris-Ouest-Nanterre¹², Rostock¹³ and Pierre & Marie Curie¹⁴ 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 must 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 bracketed 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 stage¹⁵): 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 BenchKit is available at <http://benchkit.cosyverif.org>.

5 Conclusion

This document 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.csyverif.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

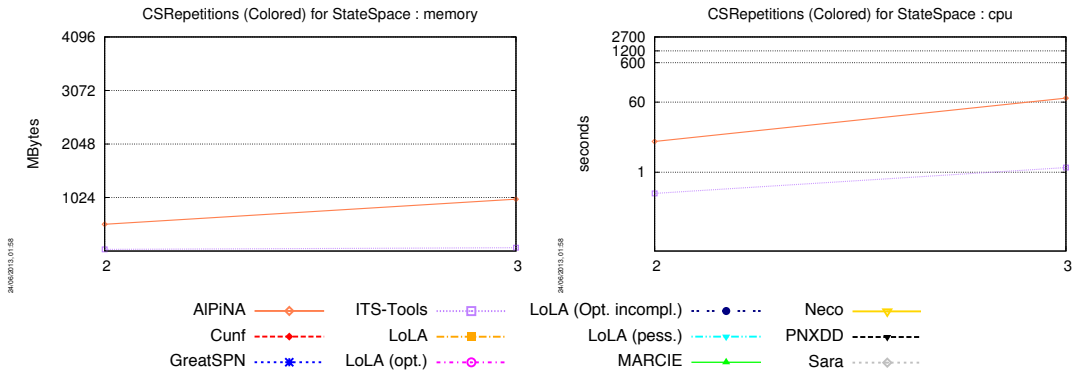
State Space Generation

6 The StateSpace Examination

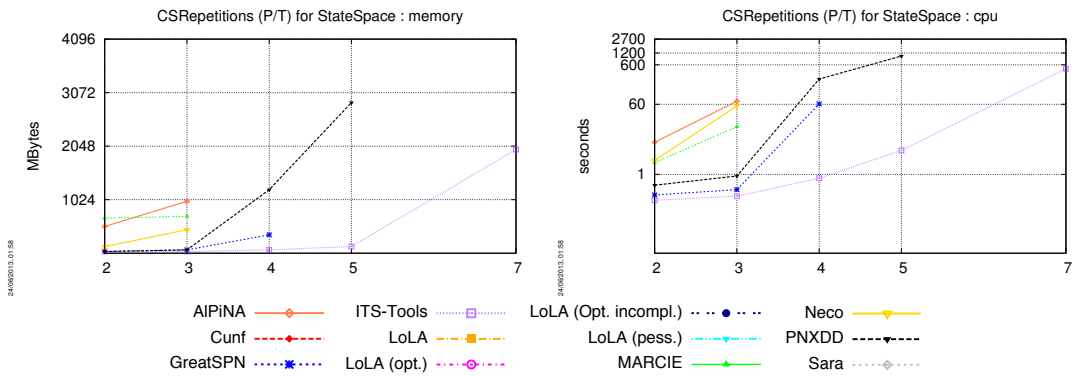
This examination deals with state space generation only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

6.1 Handling of Models by Tools

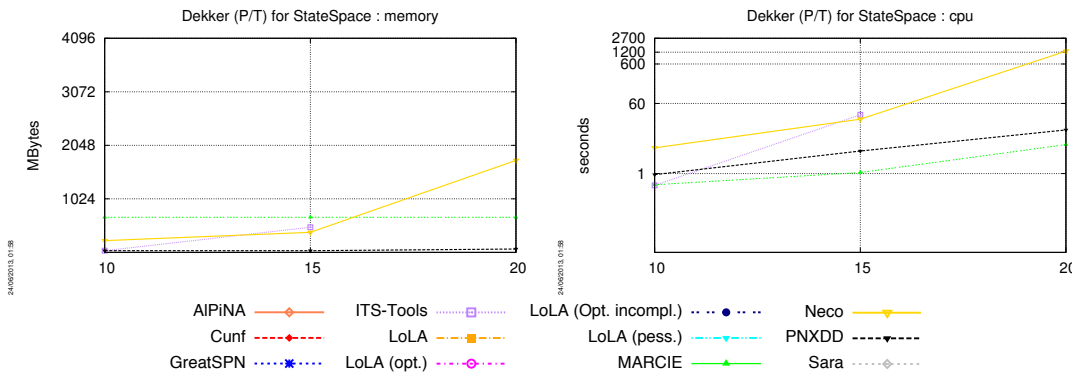
CSRepetitions (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



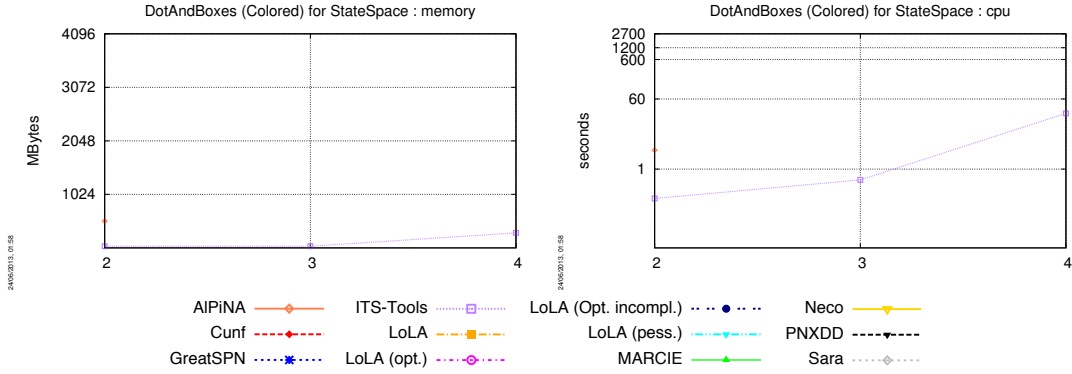
CSRepetitions (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



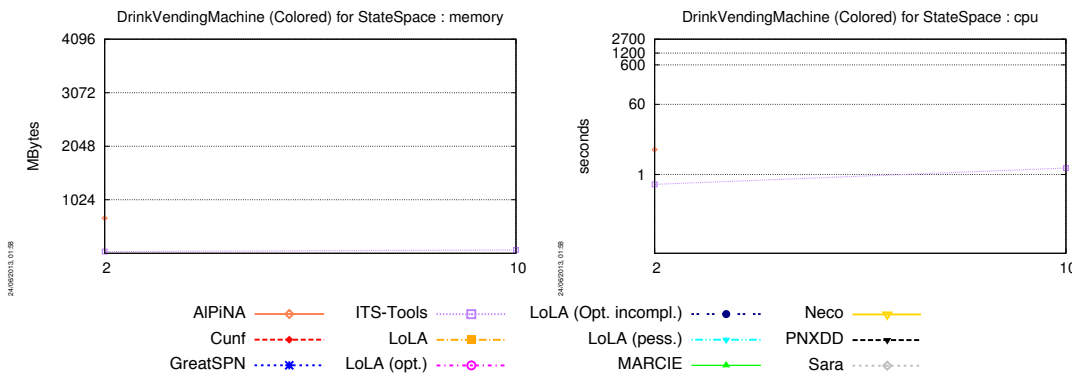
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



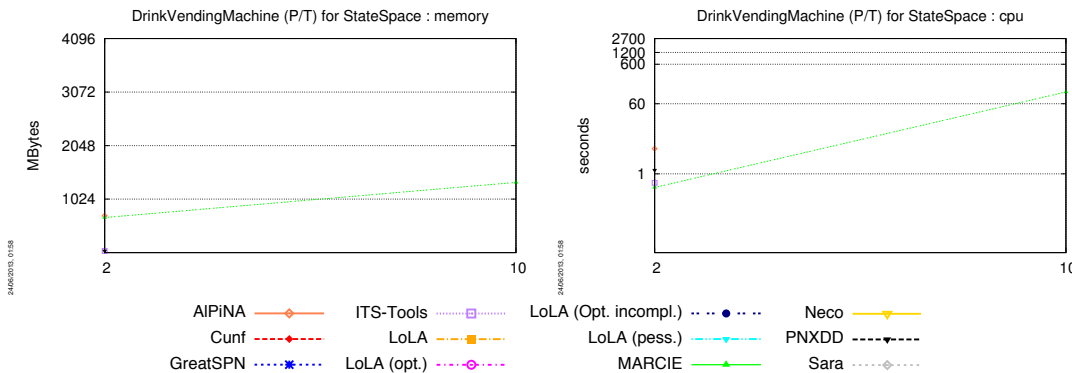
DotAndBoxes (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

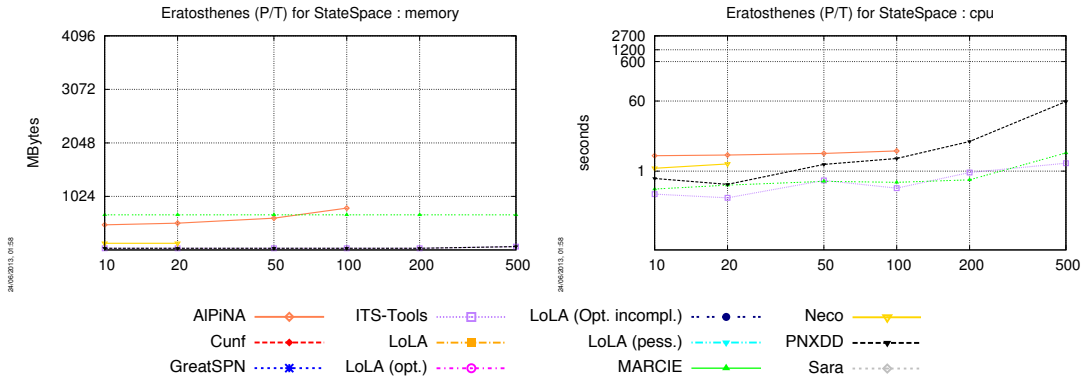


DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

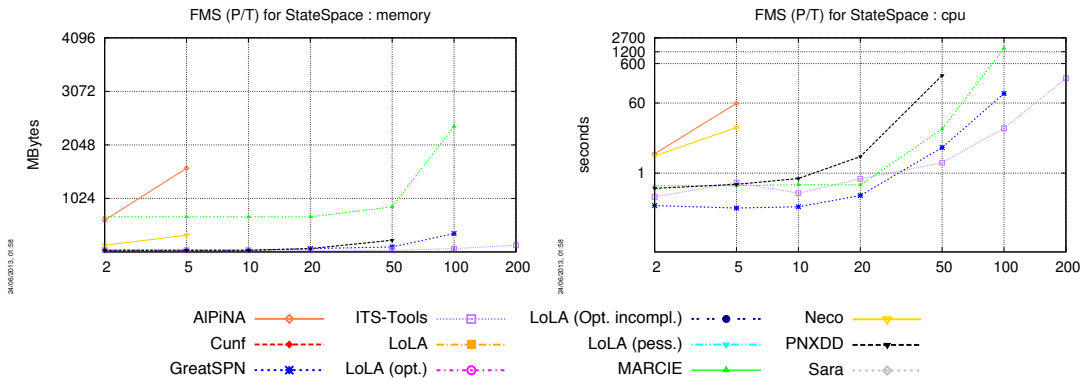


Echo (P/T) No instance of this model could be computed for the **StateSpace** examination.

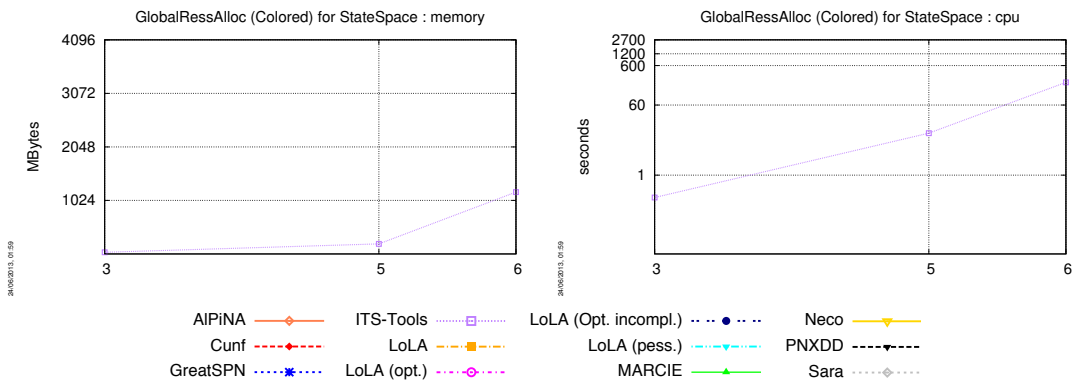
Eratosthenes (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



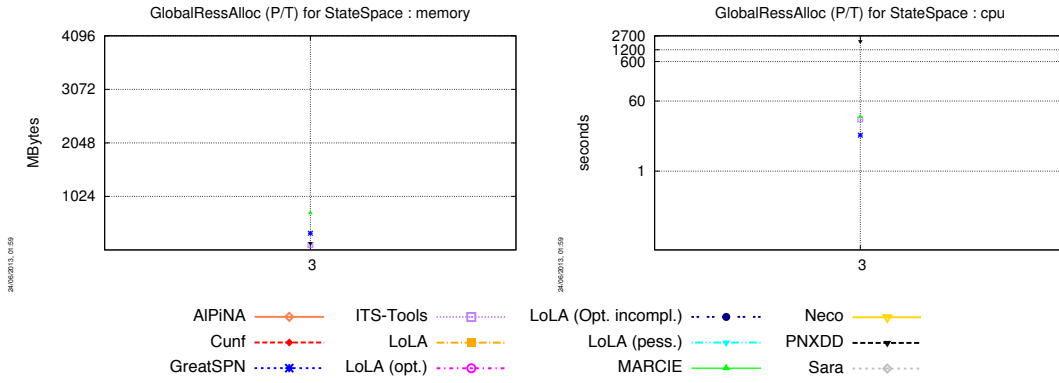
FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



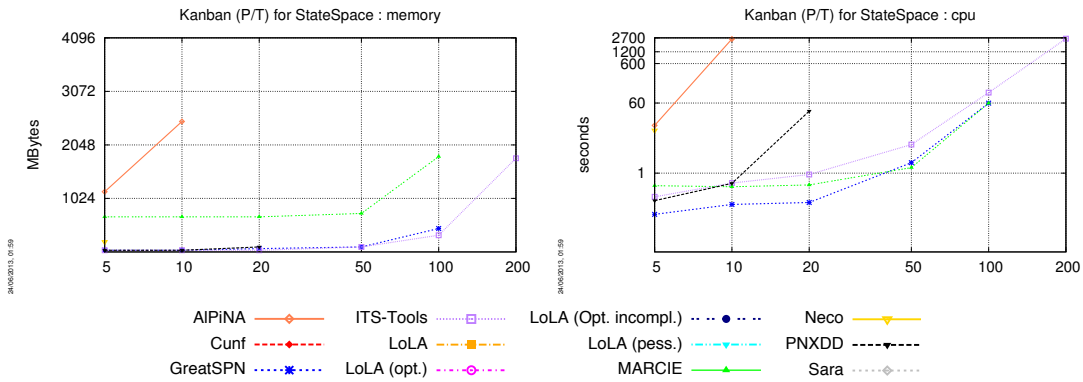
GlobalResAlloc (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



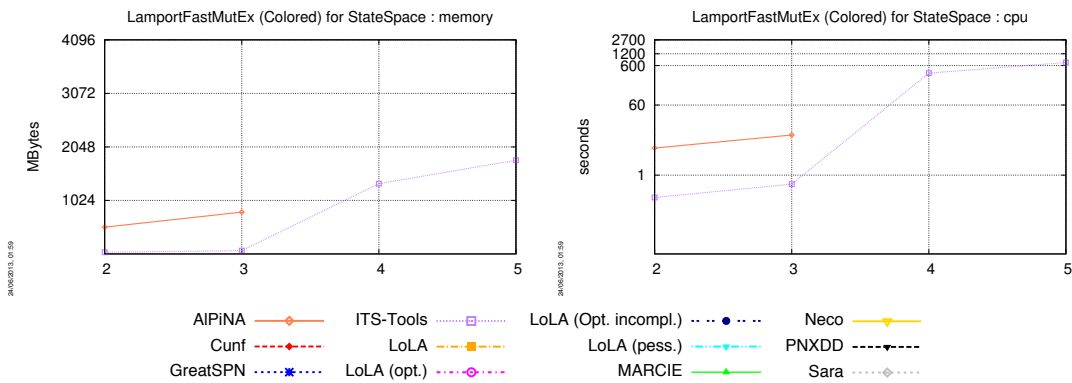
GlobalResAlloc (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



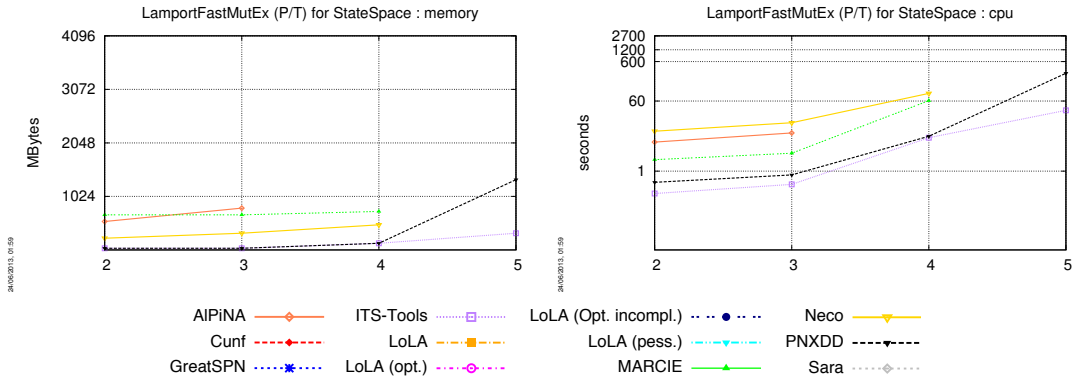
Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



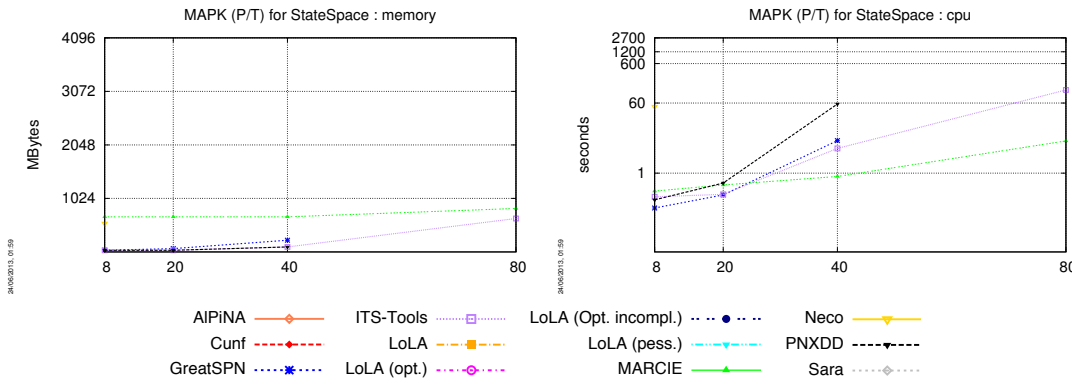
LamportFastMutEx (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



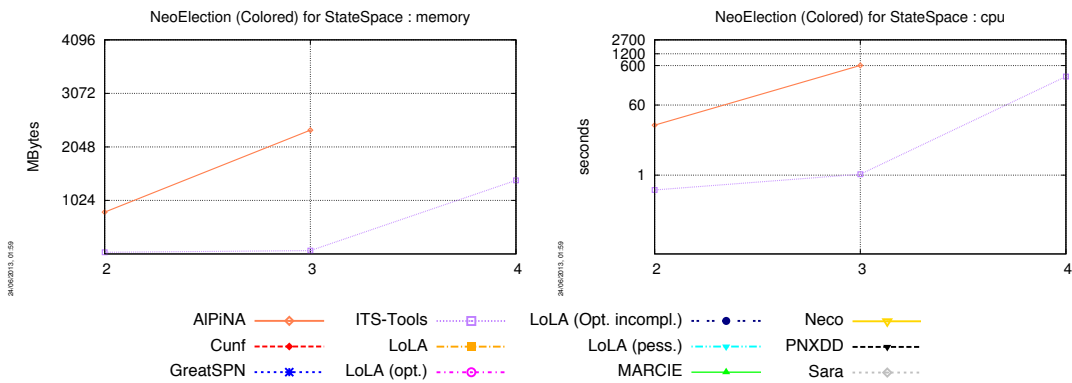
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



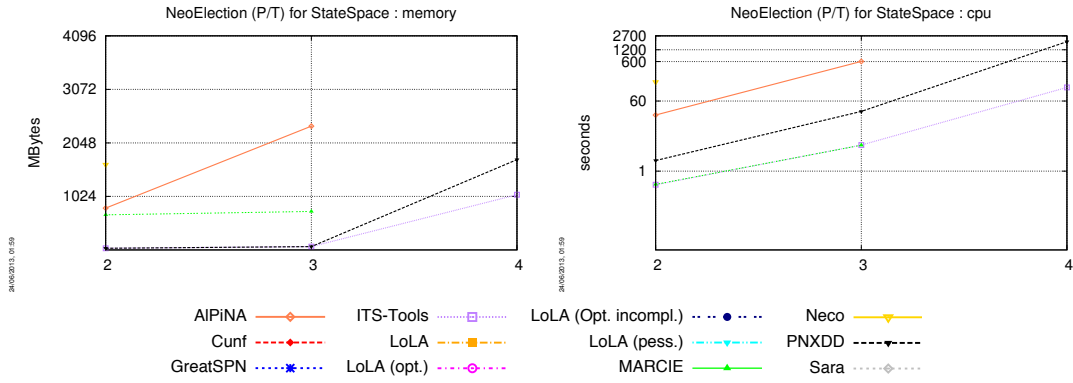
MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



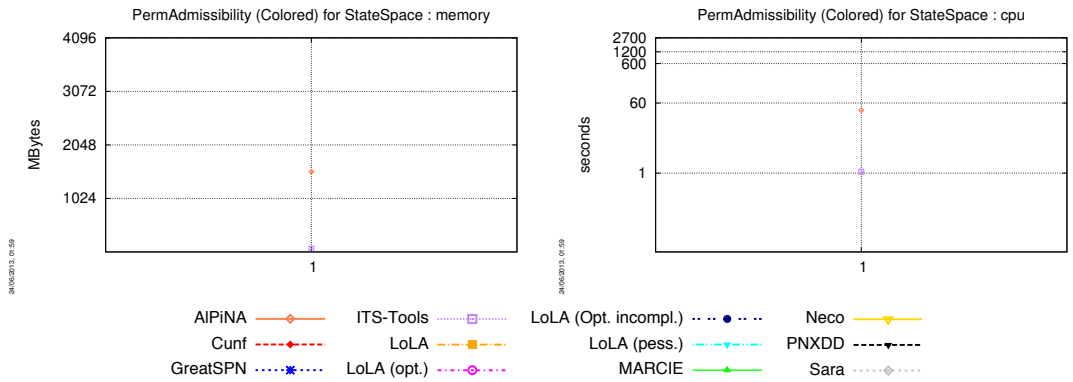
NeoElection (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



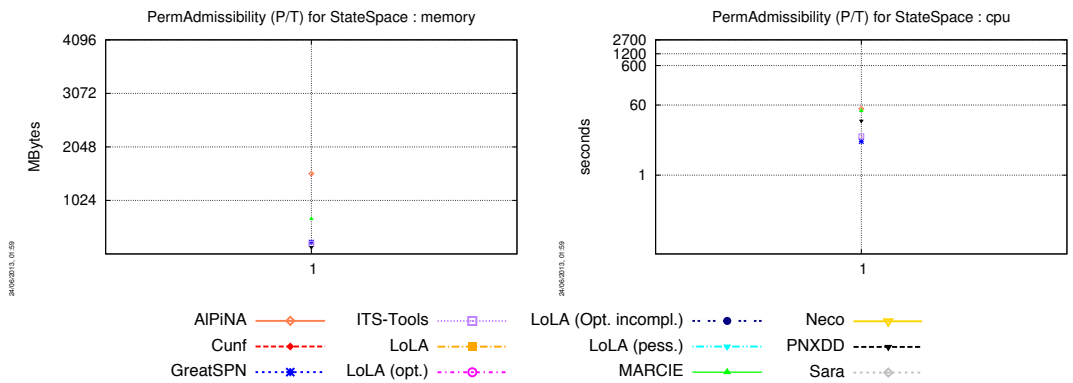
NeoElection (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



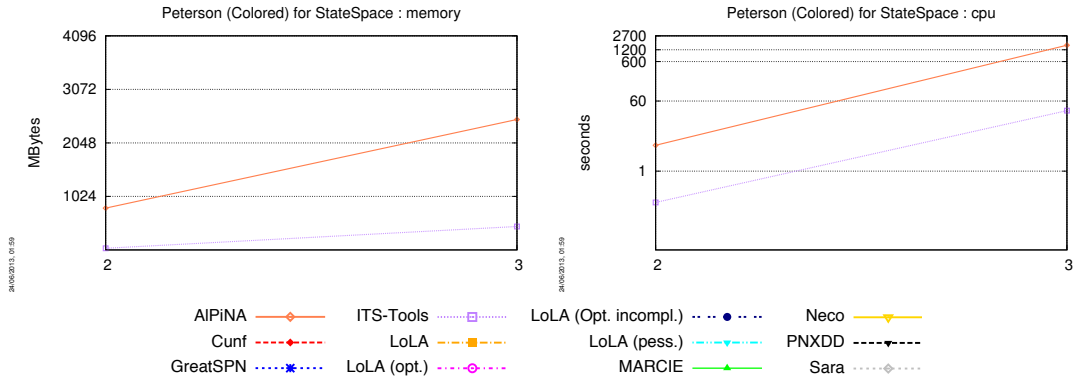
PermAdmissibility (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



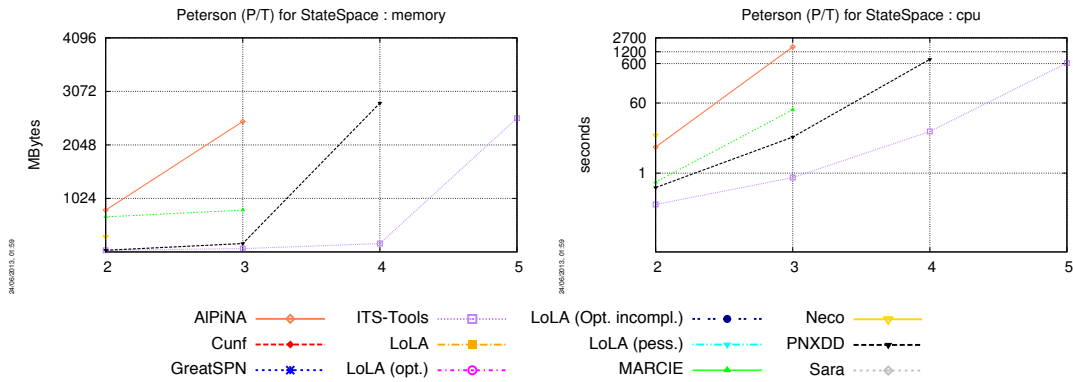
PermAdmissibility (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



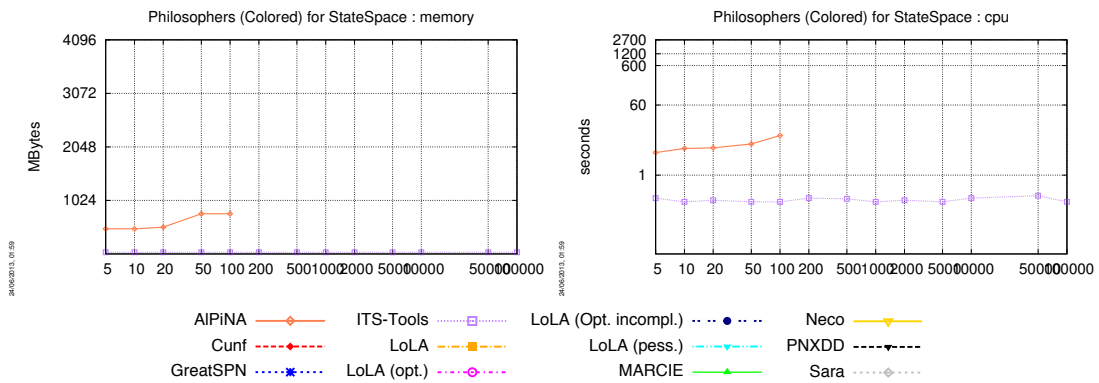
Peterson (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



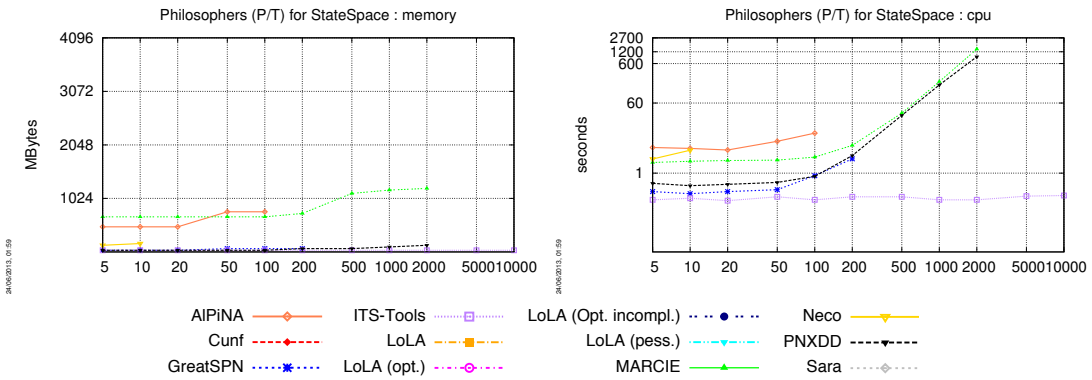
Peterson (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



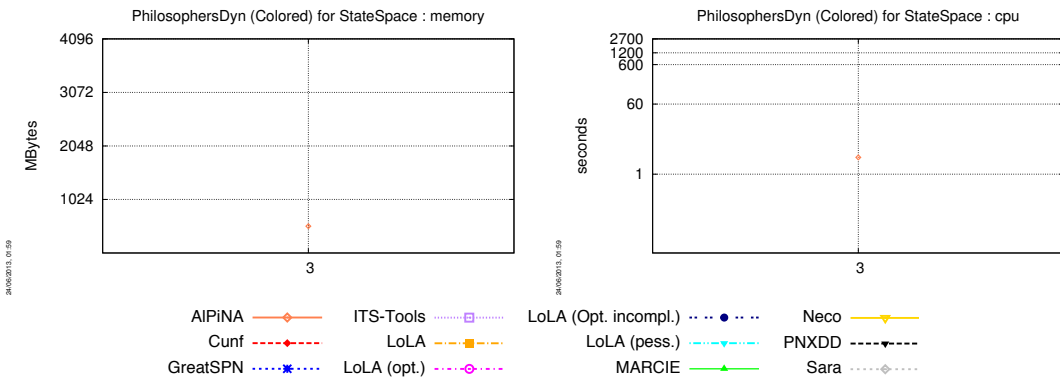
Philosophers (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



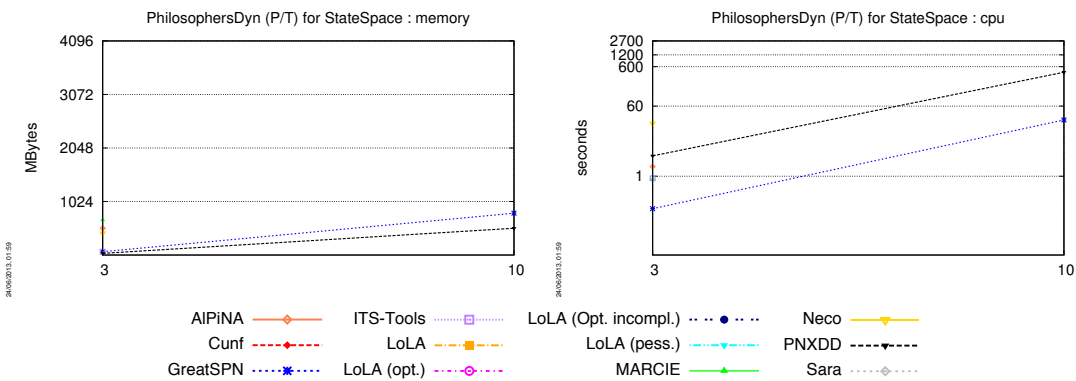
Philosophers (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

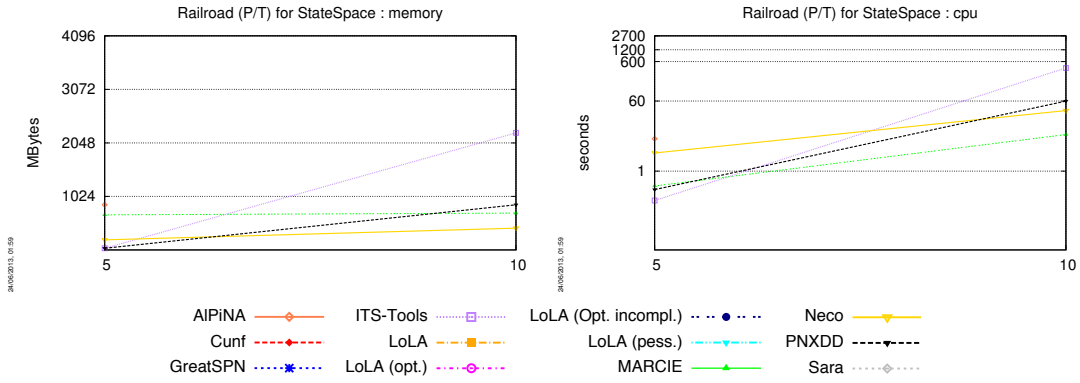


PhilosophersDyn (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

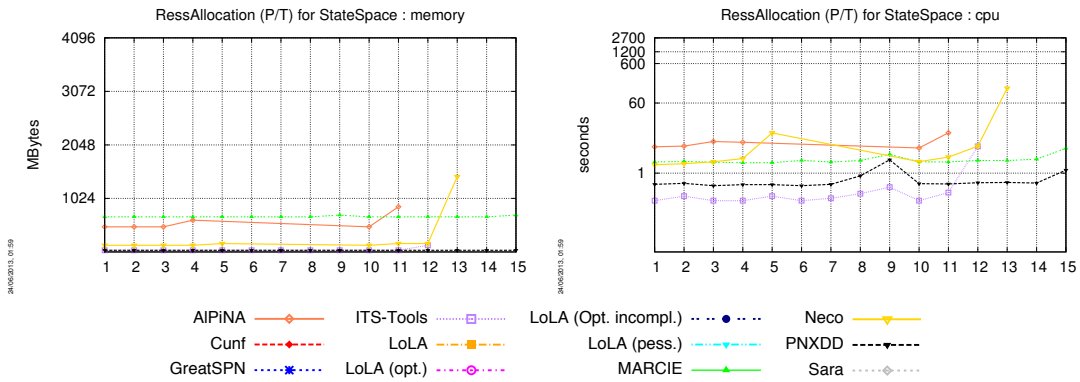


Planning (P/T) No instance of this model could be computed for the **StateSpace** examination.

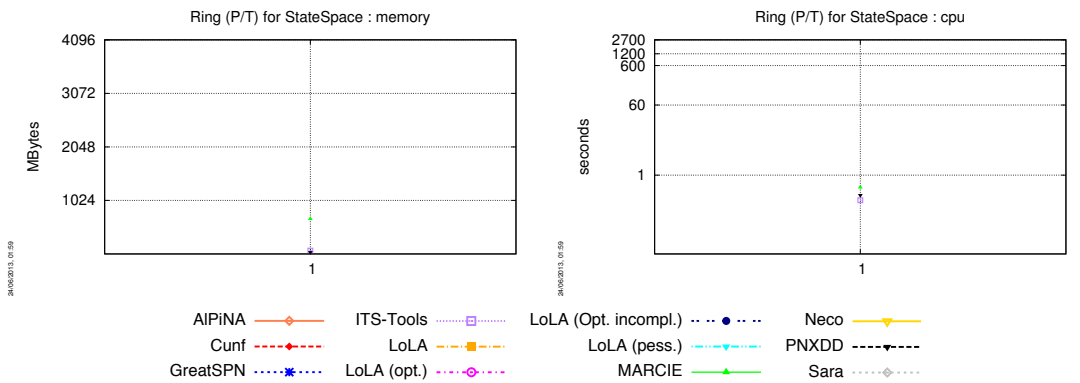
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



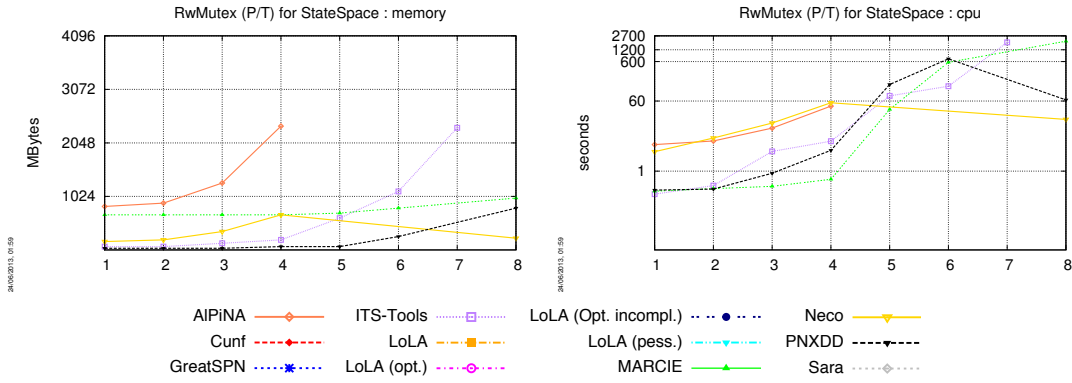
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



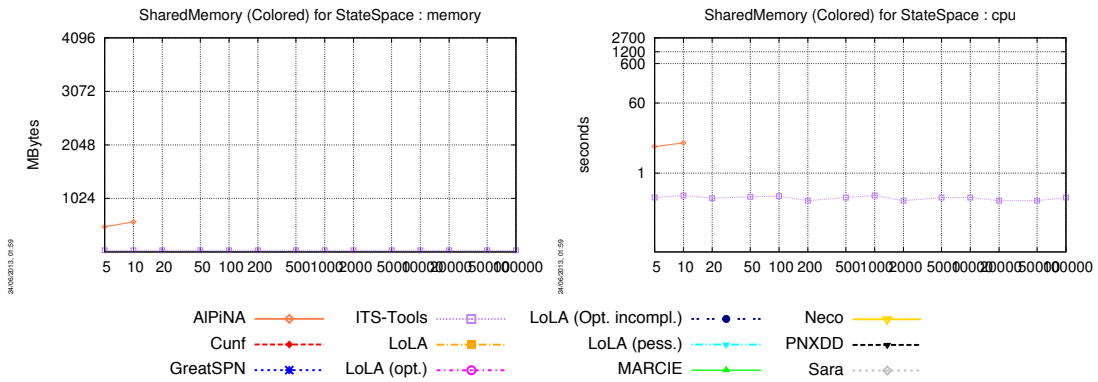
Ring (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



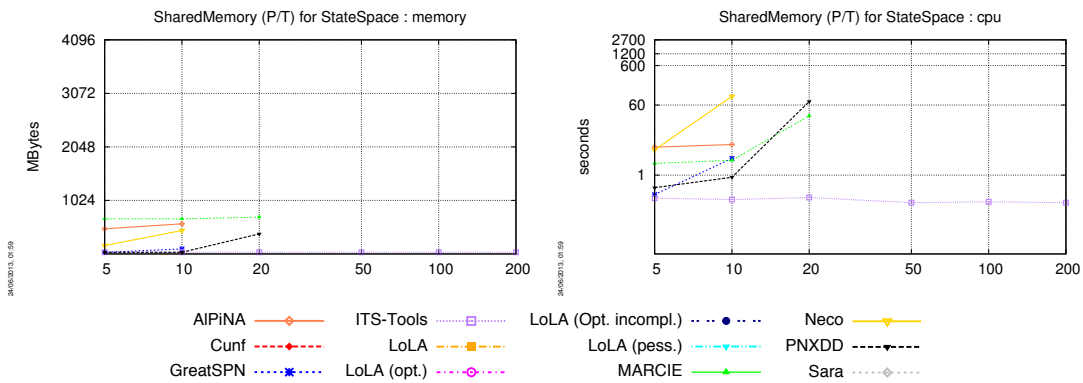
RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



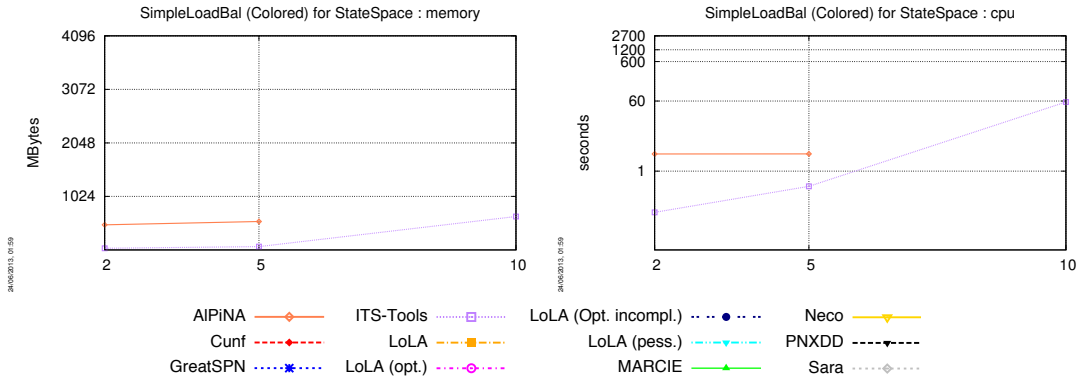
SharedMemory (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



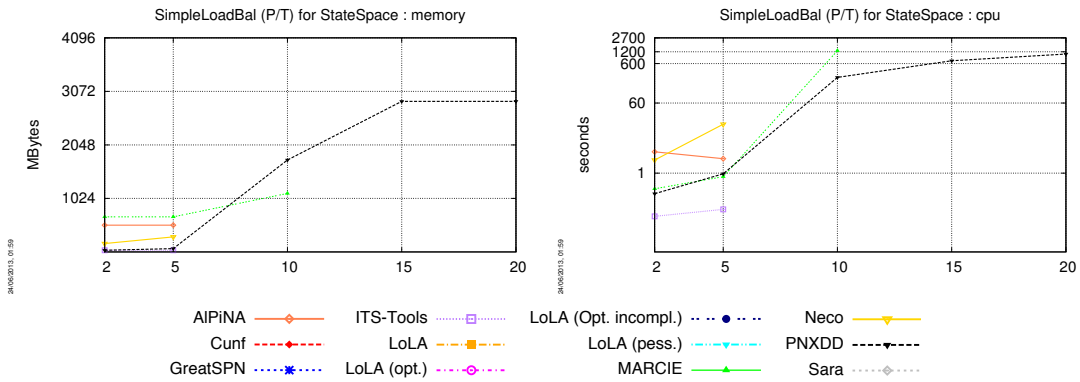
SharedMemory (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



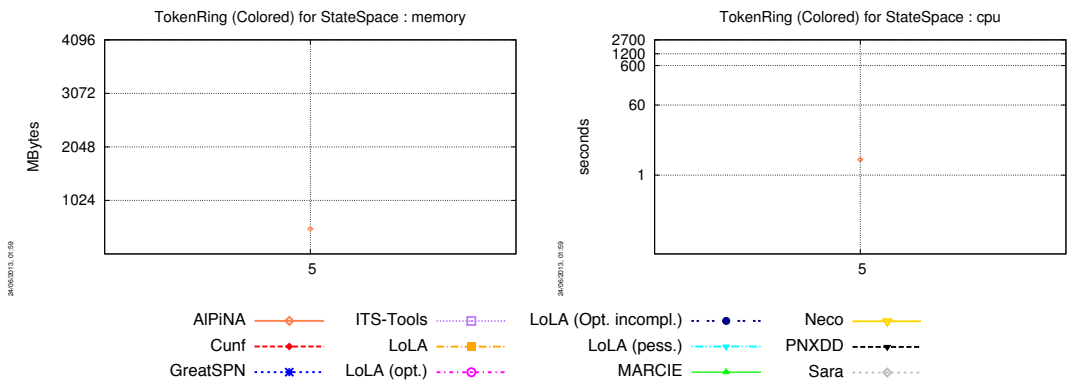
SimpleLoadBal (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



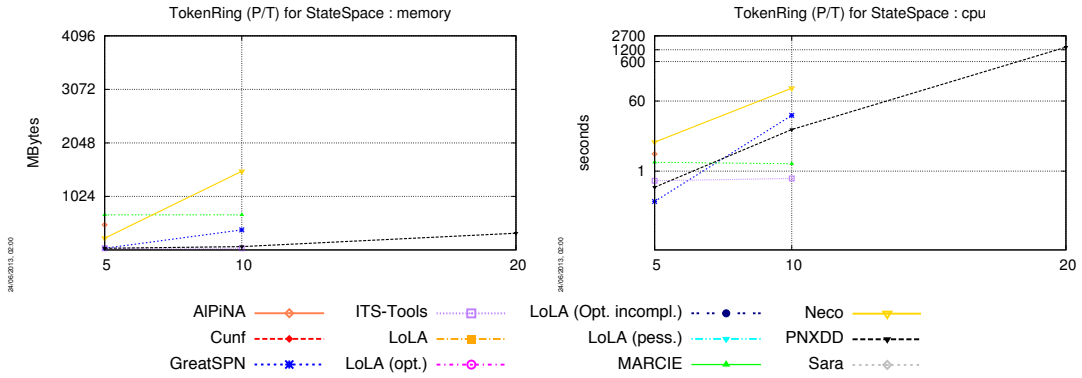
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



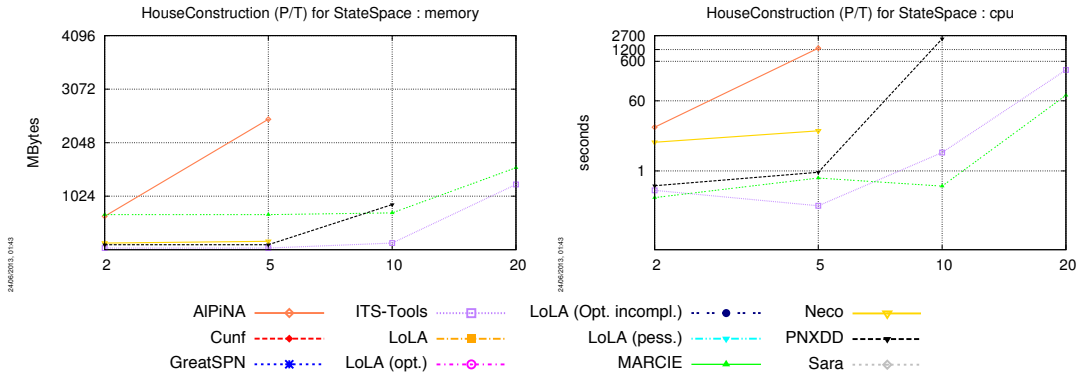
TokenRing (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



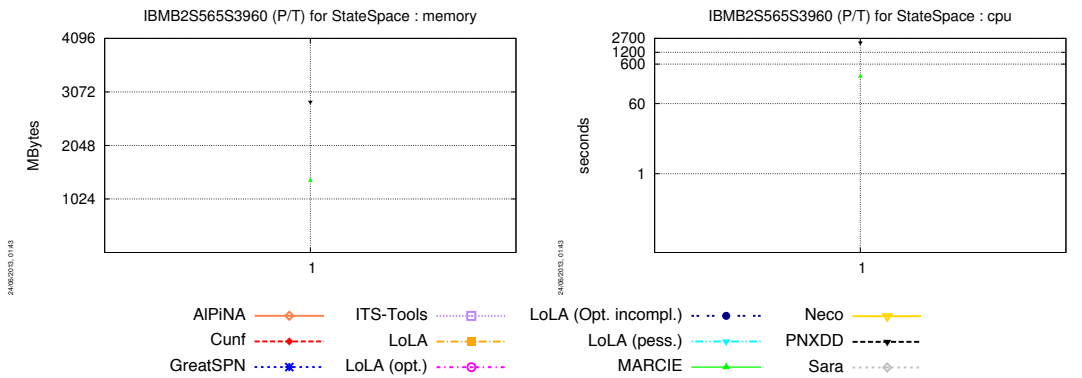
TokenRing (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

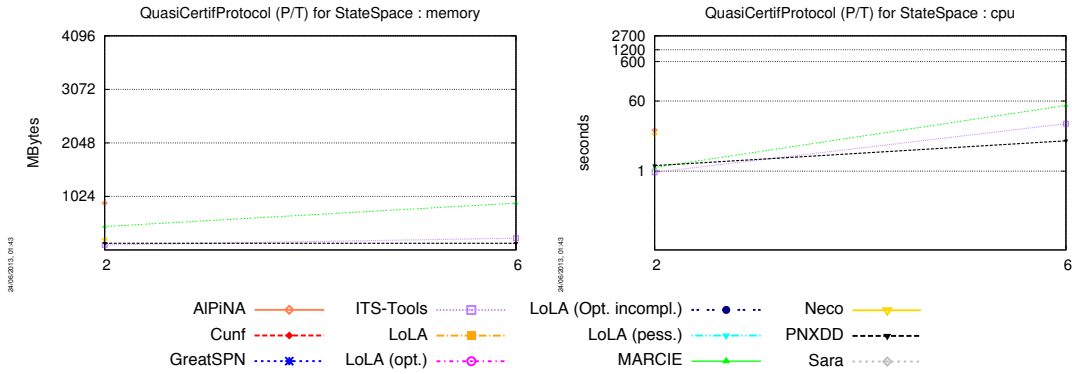


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

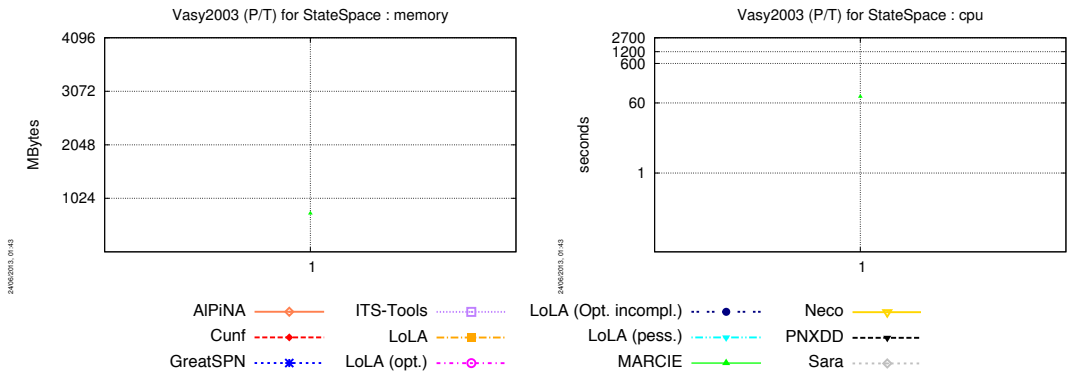


QuasiCertifProtocol (colored) No instance of this model could be computed for the **StateSpace** examination.

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 “Surprise” 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.

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

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

Instances	ALPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
03	to	nc	6320	nc	nc	nc	nc	nc
05	to	nc	1.066×10^{08}	nc	nc	nc	nc	nc
06	to	nc	2.572×10^{10}	nc	nc	nc	nc	nc
07	to	nc	mp	nc	nc	nc	nc	nc
09	to	nc	mp	nc	nc	nc	nc	nc
10	to	nc	mp	nc	nc	nc	nc	nc
11	to	nc	mp	nc	nc	nc	nc	nc
GlobalResAlloc (P/T)								
Instances	ALPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
03	to	6320	6320	nc	6320	nc	6320	6320
05	to	cc	to	nc	to	nc	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}	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}	1.006×10^{09}
0020	to	8.054×10^{11}	8.054×10^{11}	nc	8.054×10^{11}	cc	8.054×10^{11}	8.054×10^{11}
0050	to	1.043×10^{16}	1.043×10^{16}	nc	1.043×10^{16}	nc	to	to
0100	to	1.726×10^{19}	1.726×10^{19}	nc	1.726×10^{19}	nc	to	to
0200	to	cc	3.173×10^{22}	nc	to	nc	to	to
0500	to	cc	to	nc	to	nc	to	to
1000	to	to	to	nc	to	nc	to	to
LamportFastMutEx (colored)								
Instances	ALPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
2	380	nc	1370	nc	nc	nc	nc	nc
3	19742	nc	34529	nc	nc	nc	nc	nc
4	to	nc	3.978×10^{07}	nc	nc	nc	nc	nc
5	to	nc	1.585×10^{09}	nc	nc	nc	nc	nc
6	to	nc	mp	nc	nc	nc	nc	nc
7	to	nc	mp	nc	nc	nc	nc	nc
8	to	nc	mp	nc	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	380
3	19742	nc	19742	nc	19742	19742	19742	19742
4	to	nc	1.915×10^{06}	nc	1.915×10^{06}	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}	5.307×10^{08}
6	to	nc	mp	nc	to	cc	mp	mp
7	to	nc	mp	nc	to	to	mp	mp
8	to	nc	mp	nc	to	to	mp	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}	6.111×10^{06}
020	to	8.813×10^{10}	8.813×10^{10}	nc	8.813×10^{10}	cc	8.813×10^{10}	8.813×10^{10}
040	to	4.783×10^{14}	4.783×10^{14}	nc	4.783×10^{14}	nc	4.783×10^{14}	4.783×10^{14}
080	to	to	5.635×10^{18}	nc	5.635×10^{18}	nc	to	to
160	to	to	to	nc	to	nc	to	to
320	to	to	mp	nc	to	nc	to	to
NeoElection (colored)								
Instances	ALPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
2	241	nc	241	nc	nc	nc	nc	nc
3	29024	nc	974325	nc	nc	nc	nc	nc
4	to	nc	2.919×10^{11}	nc	nc	nc	nc	nc
5	to	nc	mp	nc	nc	nc	nc	nc
6	to	nc	mp	nc	nc	nc	nc	nc
7	to	nc	mp	nc	nc	nc	nc	nc
8	to	nc	mp	nc	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	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	nc
02	to	nc	mp	nc	nc	nc	nc	nc
05	to	nc	mp	nc	nc	nc	nc	nc
10	to	nc	mp	nc	nc	nc	nc	nc
20	to	nc	mp	nc	nc	nc	nc	nc
50	to	nc	mp	nc	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	52537
02	to	cc	mp	nc	to	nc	to	to
05	to	cc	mp	nc	to	nc	to	to
10	to	cc	mp	nc	to	nc	mp	mp
20	to	cc	mp	nc	to	nc	mp	mp
50	to	cc	mp	nc	to	nc	mp	mp
Peterson (colored)								
Instances	ALPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
2	20754	nc	20754	nc	nc	nc	nc	nc
3	3.408×10^{06}	nc	3.408×10^{06}	nc	nc	nc	nc	nc
4	to	nc	mp	nc	nc	nc	nc	nc
5	cc	nc	mp	nc	nc	nc	nc	nc
6	cc	nc	mp	nc	nc	nc	nc	nc
7	cc	nc	mp	nc	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	20754
3	3.408×10^{06}	nc	3.408×10^{06}	nc	3.408×10^{06}	to	3.408×10^{06}	3.408×10^{06}
4	to	nc	6.299×10^{08}	nc	to	cc	6.299×10^{08}	6.299×10^{08}
5	cc	nc	1.366×10^{11}	nc	to	nc	nc	nc
6	cc	nc	mp	nc	to	nc	nc	nc
7	cc	nc	mp	nc	to	nc	nc	nc
Philosophers (colored)								
Instances	ALPiNA	GreatSPN	ITS-Tools	LoLa	pess	Marcie	Neco	PNXDD
000005	243	nc	243	nc	nc	nc	nc	nc
000010	59049	nc	59049	nc	nc	nc	nc	nc
000020	3.487×10^{09}	nc	3.487×10^{09}	nc	nc	nc	nc	nc
000050	7.179×10^{23}	nc	7.179×10^{23}	nc	nc	nc	nc	nc
000100	5.154×10^{47}	nc	5.154×10^{47}	nc	nc	nc	nc	nc
000200	cc	nc	2.656×10^{95}	nc	nc	nc	nc	nc
000500	cc	nc	3.64×10^{238}	nc	nc	nc	nc	nc
001000	cc	nc	∞ (ovf)	nc	nc	nc	nc	nc
002000	cc	nc	∞ (ovf)	nc	nc	nc	nc	nc
005000	cc	nc	∞ (ovf)	nc	nc	nc	nc	nc
010000	cc	nc	∞ (ovf)	nc	nc	nc	nc	nc
050000	cc	nc	∞ (ovf)	nc	nc	nc	nc	nc
100000	cc	nc	∞ (ovf)	nc	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	243
000010	59049	59049	59049	nc	59049	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}	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}	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}	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	to	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	GreatSPN	ITS-Tools	LoLa	pess	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	
GlobalResAlloc (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
Peterson (Colored)								
1st instance	1	1	1	0	1	0	1	1
instances	1	1	1	0	1	0	1	1
max reached	0	0	0	0	0	0	0	0
best	2	2	2	0	2	0	2	2
subtotal	4	4	4	0	4	0	4	4
Peterson (P/T)								
1st instance	1	0	1	0	0	0	0	0
instances	2	0	2	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	2	0	2	0	0	0	0	0
subtotal	5	0	5	0	0	0	0	0
Philosophers (Colored)								
1st instance	1	0	1	0	1	1	1	1
instances	2	0	4	0	2	1	3	3
max reached	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0
subtotal	3	0	7	0	3	2	4	4
Philosophers (P/T)								
1st instance	1	1	1	0	1	1	1	1
instances	5	6	11	0	9	2	9	9
max reached	0	0	2	0	0	0	0	0
best	0	0	2	0	0	0	0	0
subtotal	6	7	16	0	10	3	10	10
PhilosophersDyn (Colored)								
1st instance	1	0	0	0	0	0	0	0
instances	1	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0
best	2	0	0	0	0	0	0	0
subtotal	4	0	0	0	0	0	0	0
PhilosophersDyn (P/T)								
1st instance	1	1	1	0	1	1	1	1
instances	1	2	1	0	1	1	2	2
max reached	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	2	2
subtotal	2	5	2	0	2	2	5	5
Planning (P/T)								
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)								
1st instance	1	0	1	0	1	1	1	1
instances	1	0	2	0	2	2	2	2
max reached	0	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	1
instances	2	4	4	2	3	3
max reached	0	0	0	0	0	0
best	0	2	2	0	0	0
subtotal	3	7	7	3	4	4
IBMB2S565S3960 (P/T)						
	ALPiNA	ITS	Tools	Marcie	Neco	PNXDD
1st instance	0	0	1	0	1	1
instances	0	0	1	0	1	1
max reached	0	0	2	0	2	2
best	0	0	2	0	2	2
subtotal	0	0	6	0	6	6
QuasiCertifProtocol (Colored)						
	ALPiNA	ITS	Tools	Marcie	Neco	PNXDD
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)						
	ALPiNA	ITS	Tools	Marcie	Neco	PNXDD
1st instance	1	1	1	1	1	1
instances	1	2	2	1	2	2
max reached	0	0	0	0	0	0
best	0	2	2	0	2	2
subtotal	2	5	5	2	5	5
Vasy2003 (P/T)						
	ALPiNA	ITS	Tools	Marcie	Neco	PNXDD
1st instance	0	0	1	0	0	0
instances	0	0	1	0	0	0
max reached	0	0	2	0	0	0
best	0	0	2	0	0	0
subtotal	0	0	6	0	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 234 points	PNXDD 139 points	Marcie 129 points

For “Surprise” Models

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

Global

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

Part III

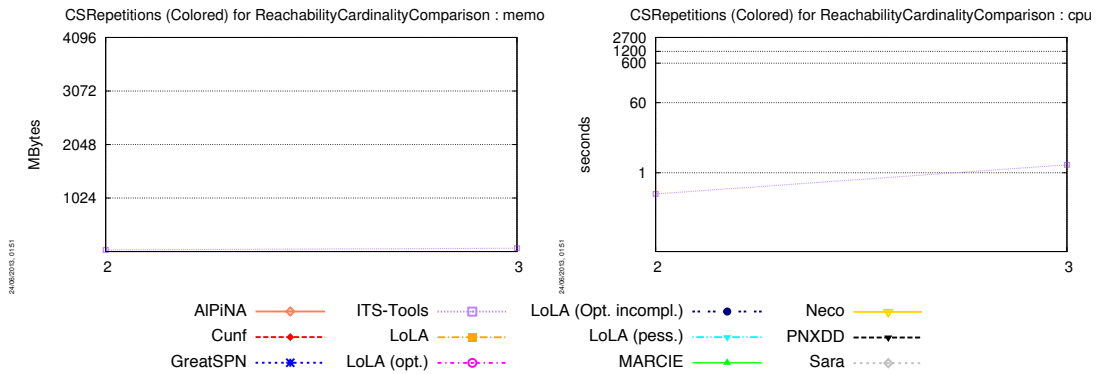
Reachability Analysis

7 The ReachabilityCardinalityComparison Examination

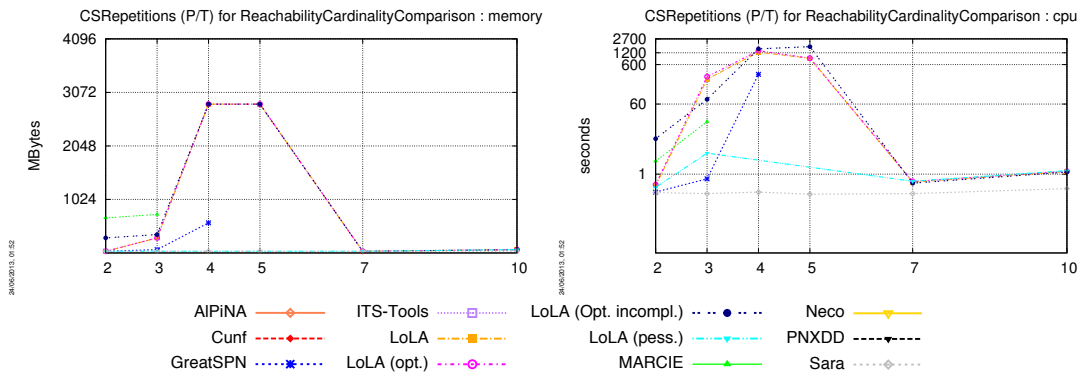
This examination deals with reachability properties dealing with checking cardinality of marking only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

7.1 Handling of Models by Tools

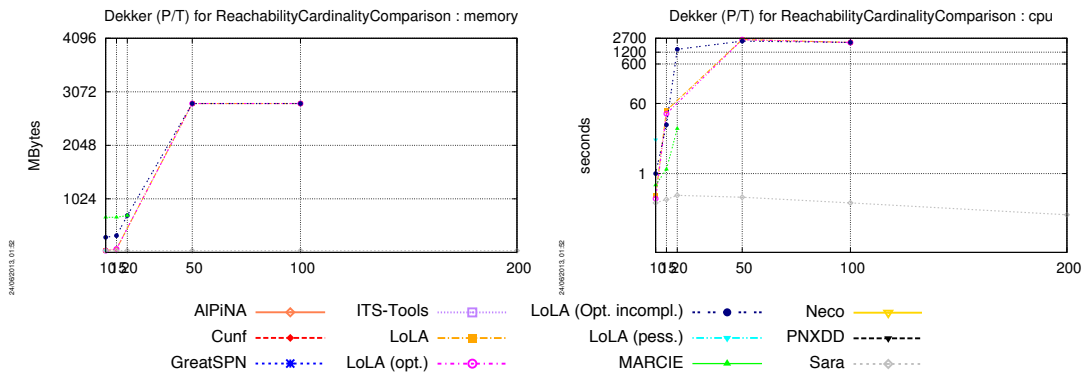
CSRepetitions (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



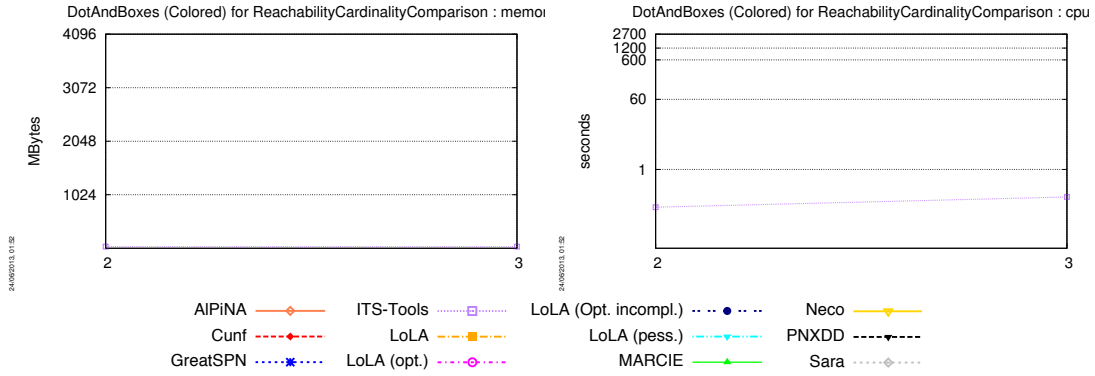
CSRepetitions (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



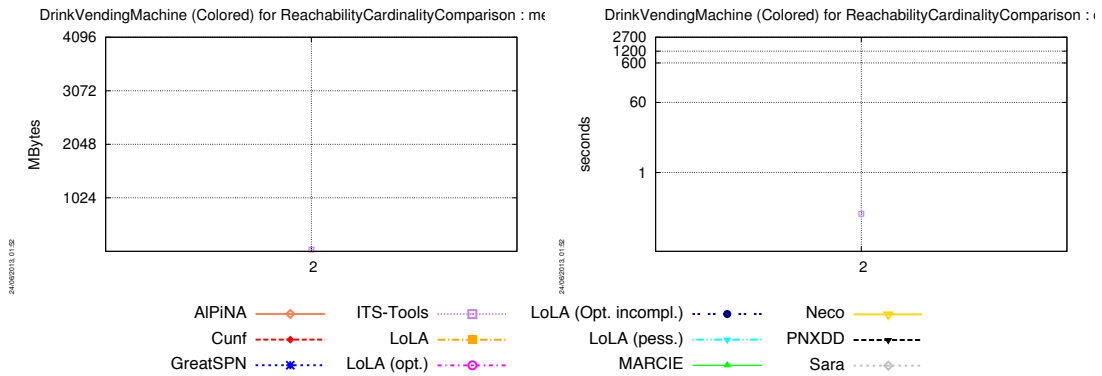
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



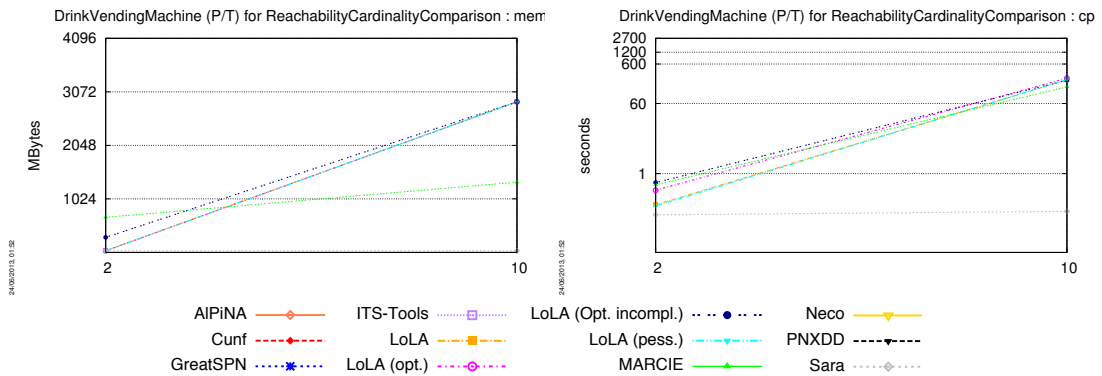
DotAndBoxes (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



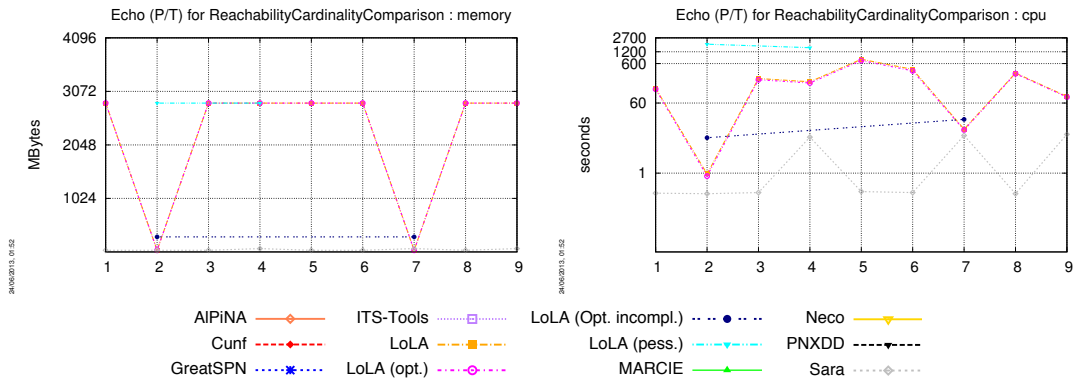
DrinkVendingMachine (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



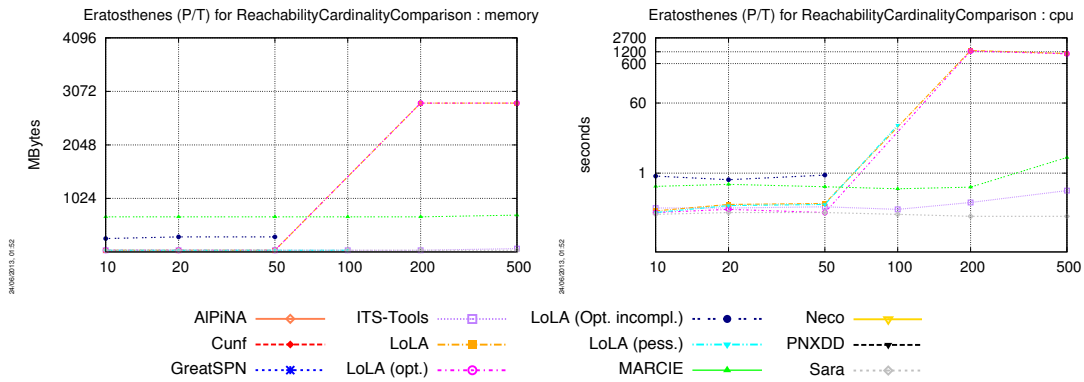
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



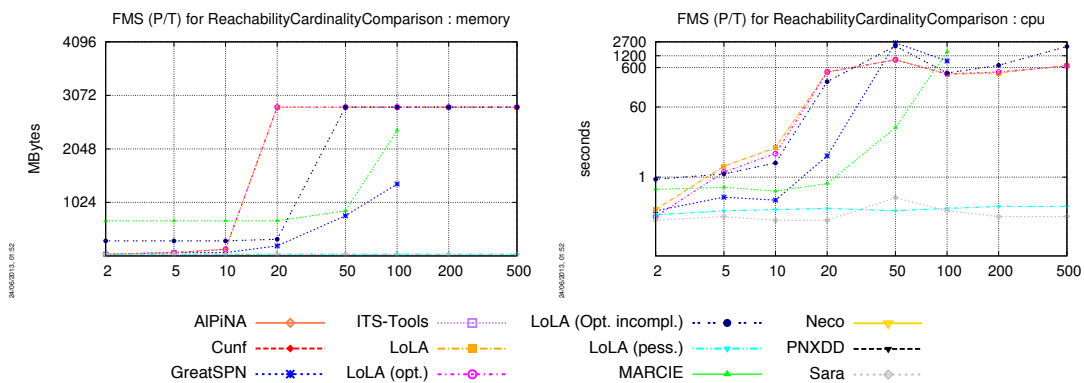
Echo (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



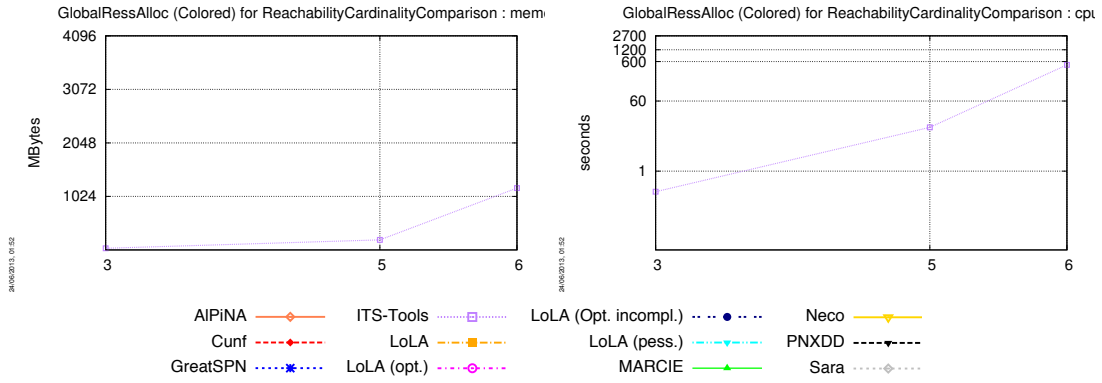
Eratosthenes (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



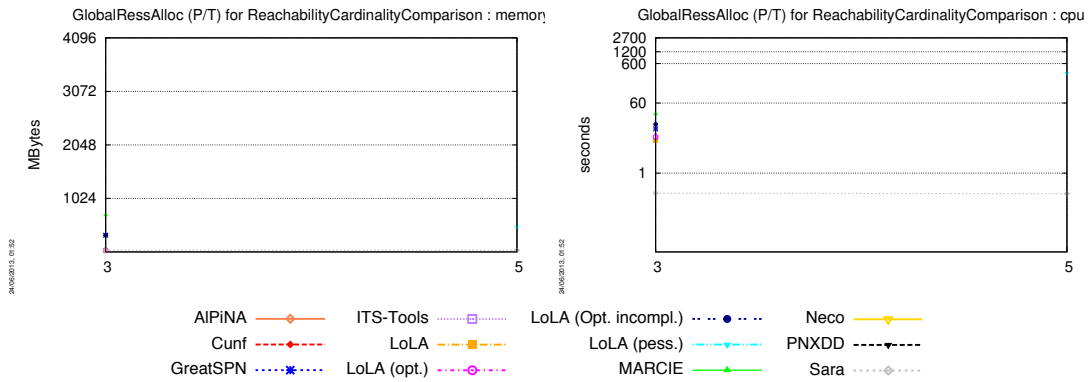
FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



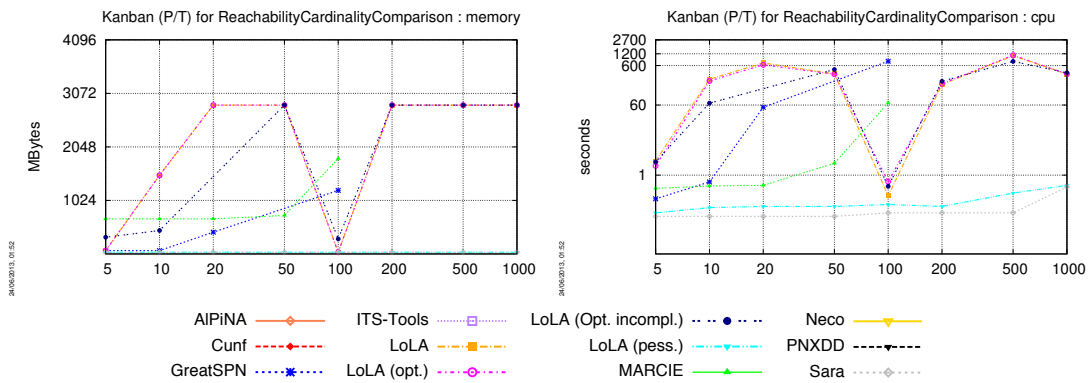
GlobalResAlloc (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



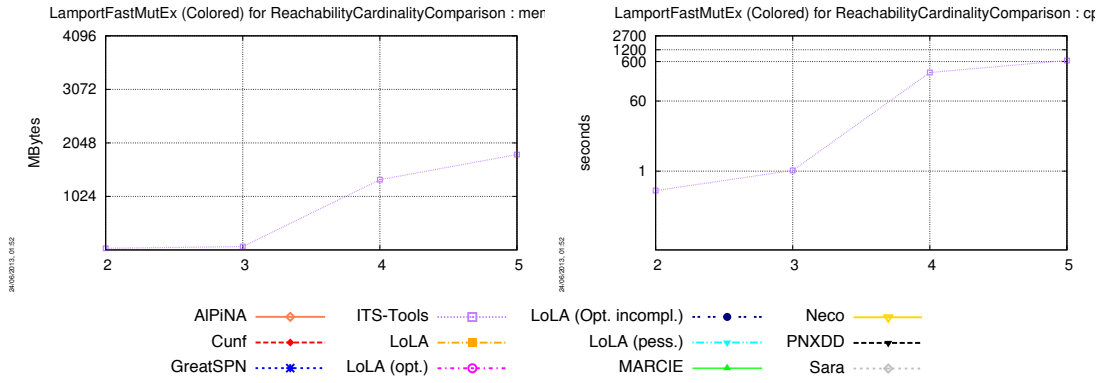
GlobalResAlloc (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



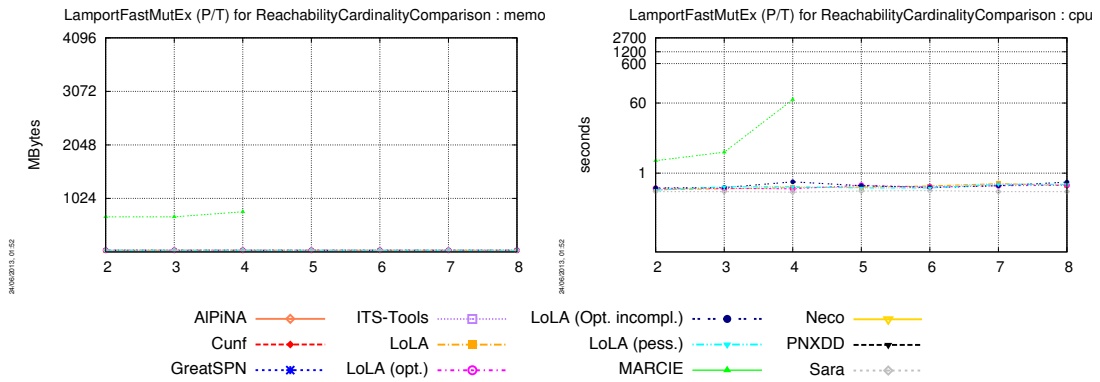
Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



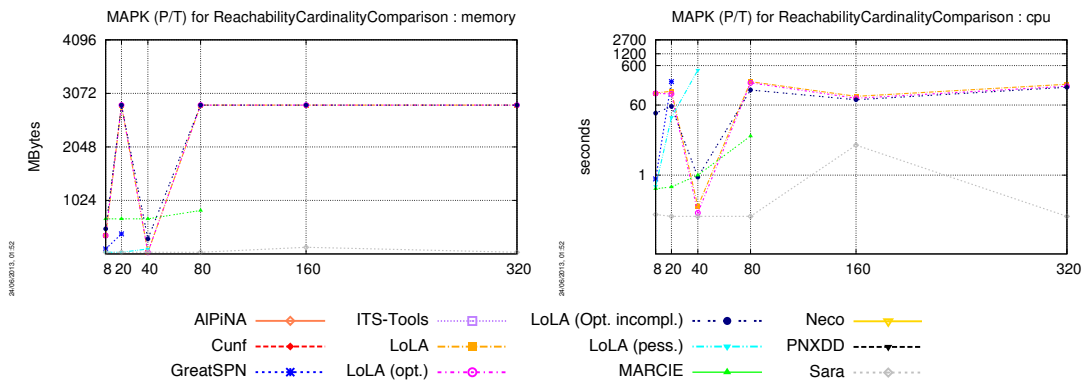
LamportFastMutEx (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



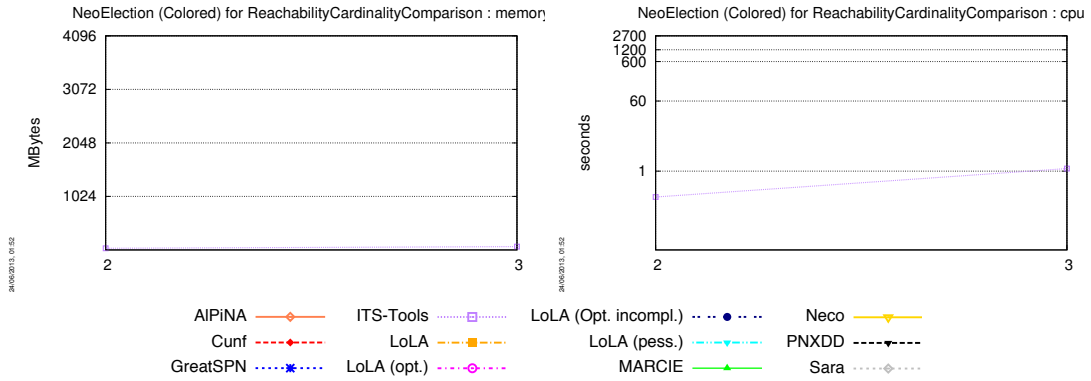
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



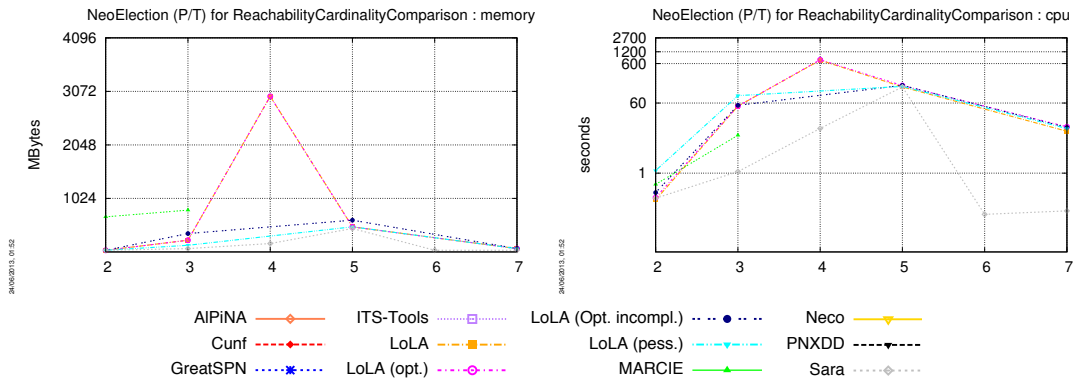
MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



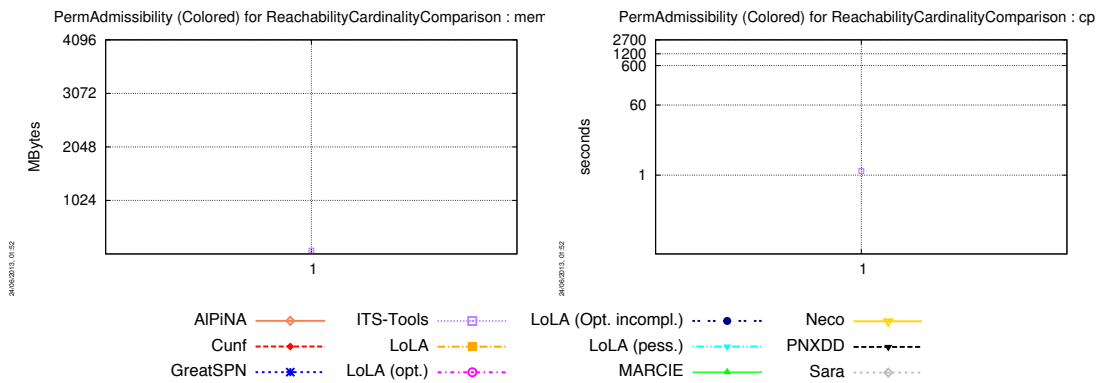
NeoElection (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



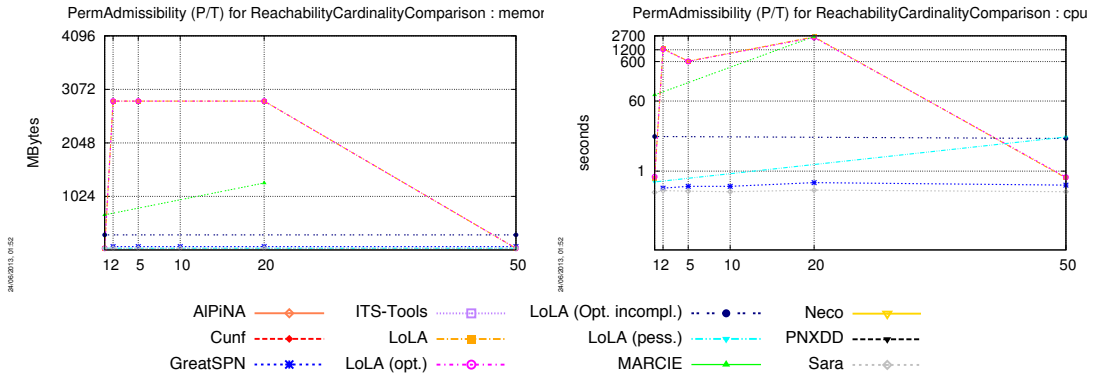
NeoElection (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



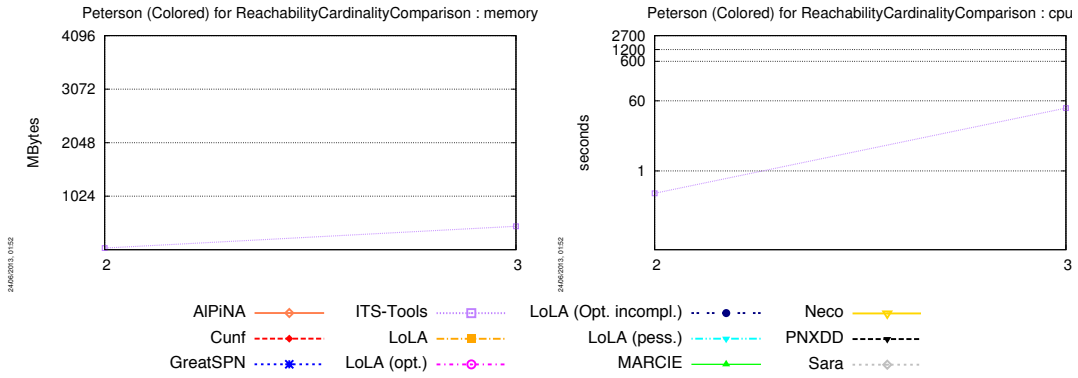
PermAdmissibility (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



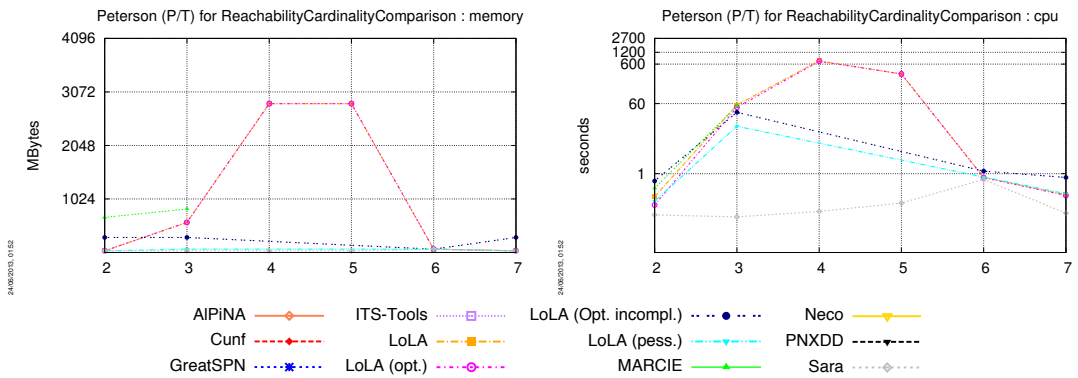
PermAdmissibility (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

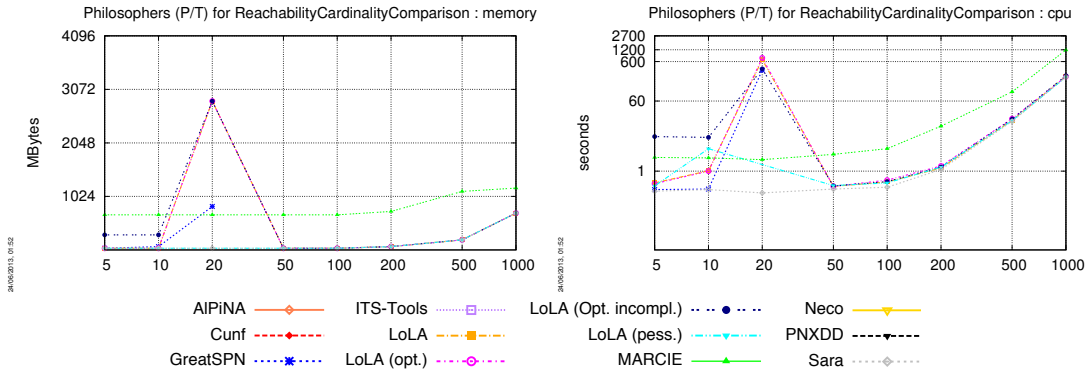


Peterson (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



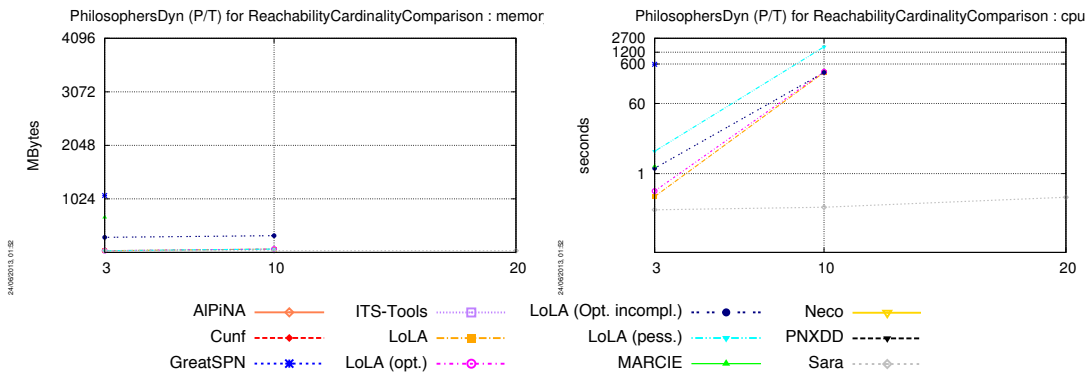
Philosophers (colored) No instance of this model could be computed for the **ReachabilityCardinalityComparison** examination.

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



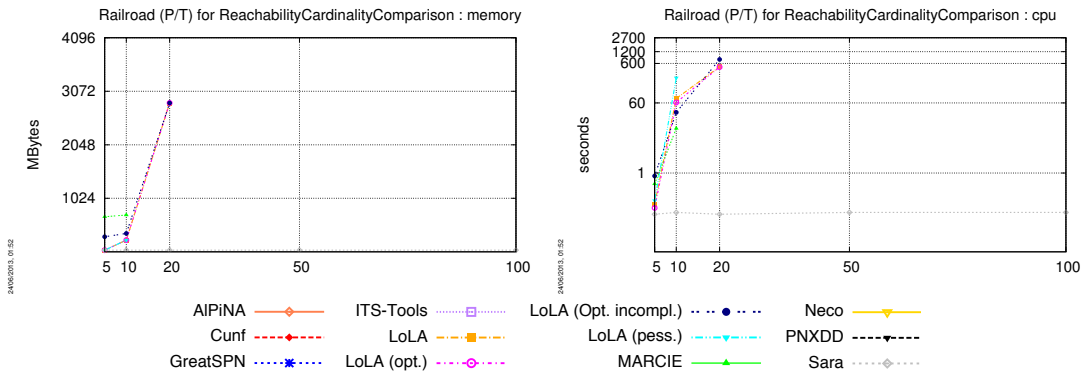
PhilosophersDyn (colored) No instance of this model could be computed for the **ReachabilityCardinalityComparison** examination.

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

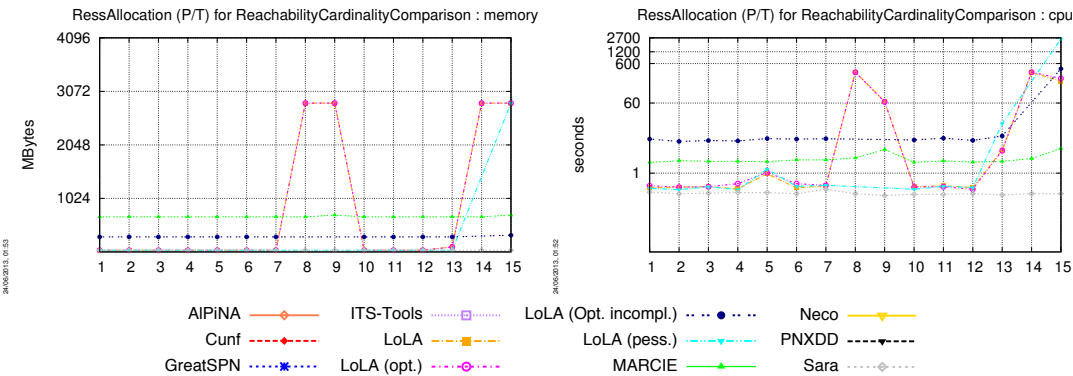


Planning (P/T) No instance of this model could be computed for the **ReachabilityCardinalityComparison** examination.

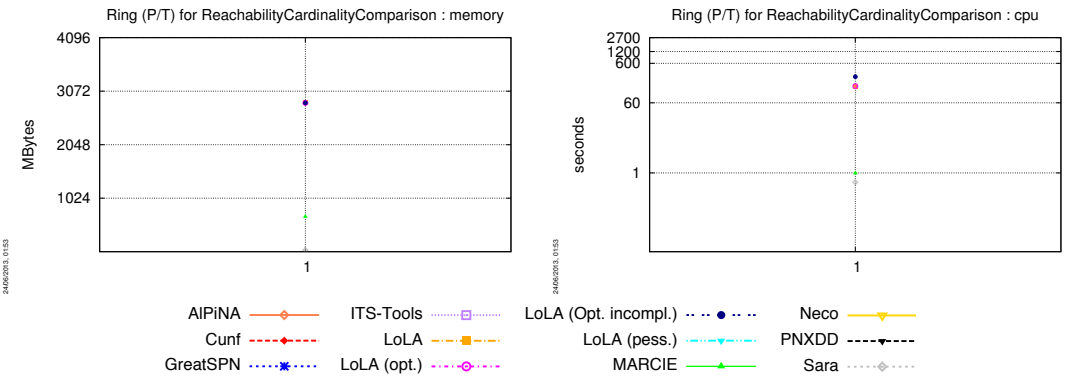
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



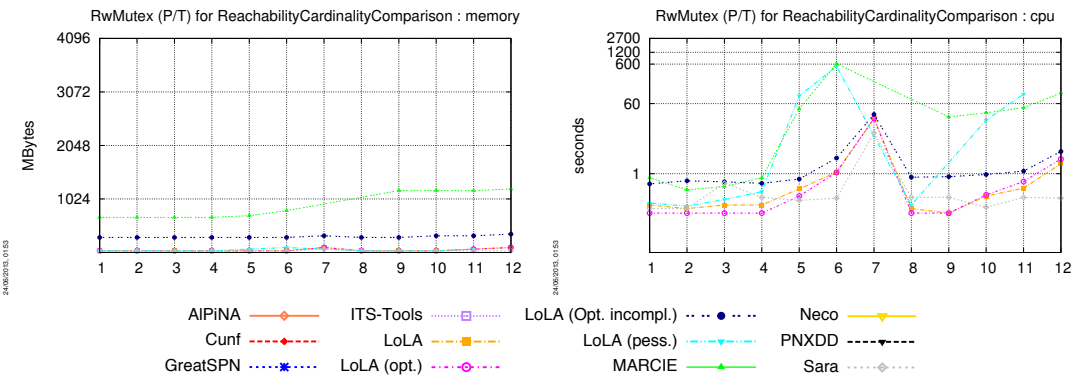
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

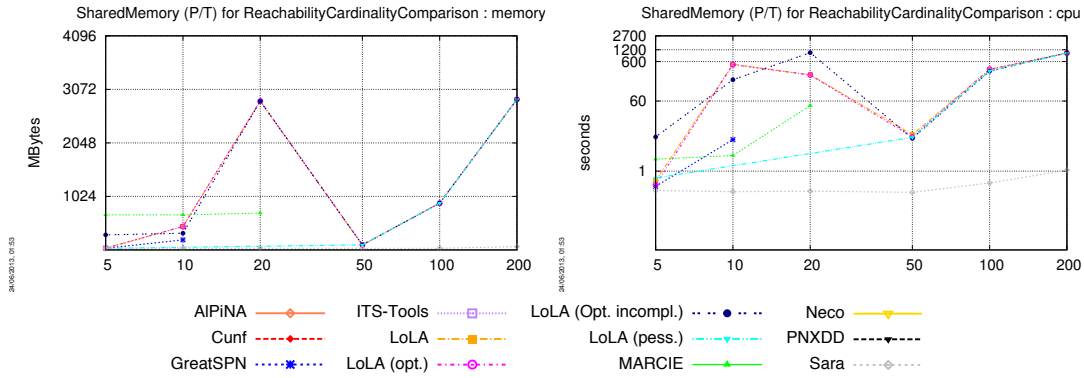


RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

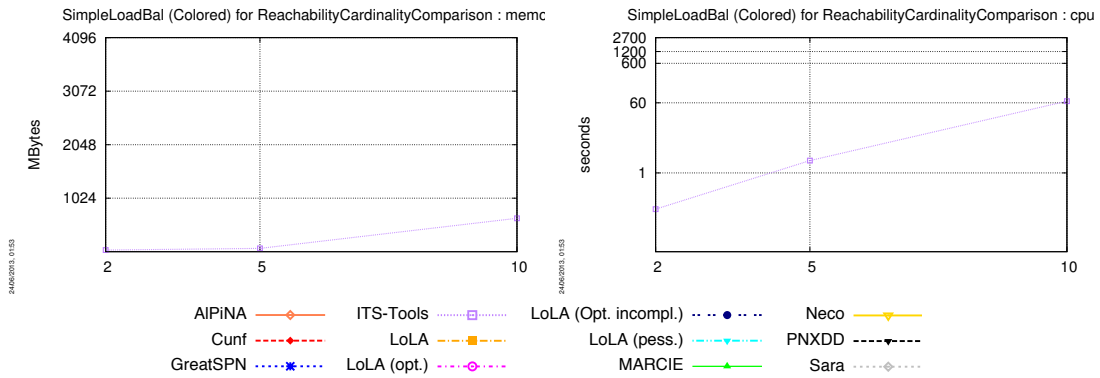


SharedMemory (colored) No instance of this model could be computed for the **ReachabilityCardinalityComparison** examination.

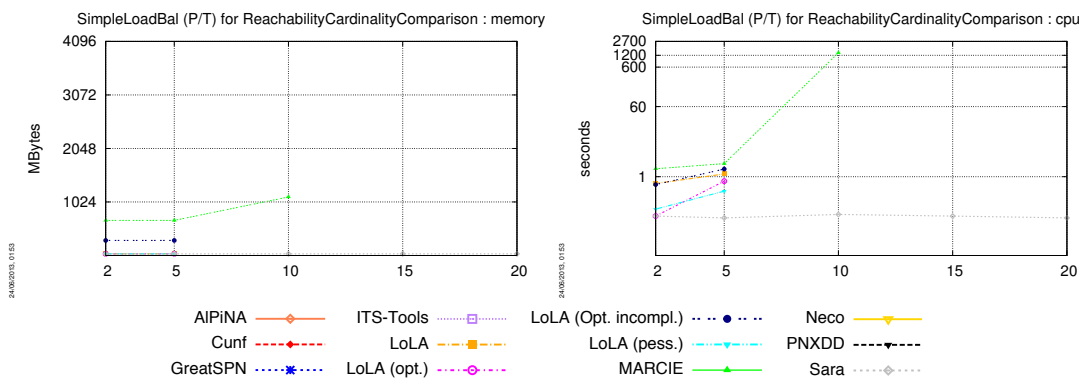
SharedMemory (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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



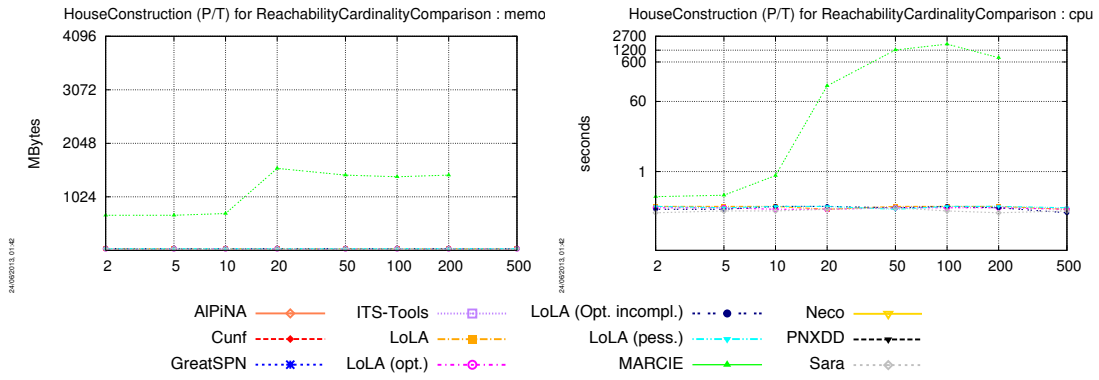
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



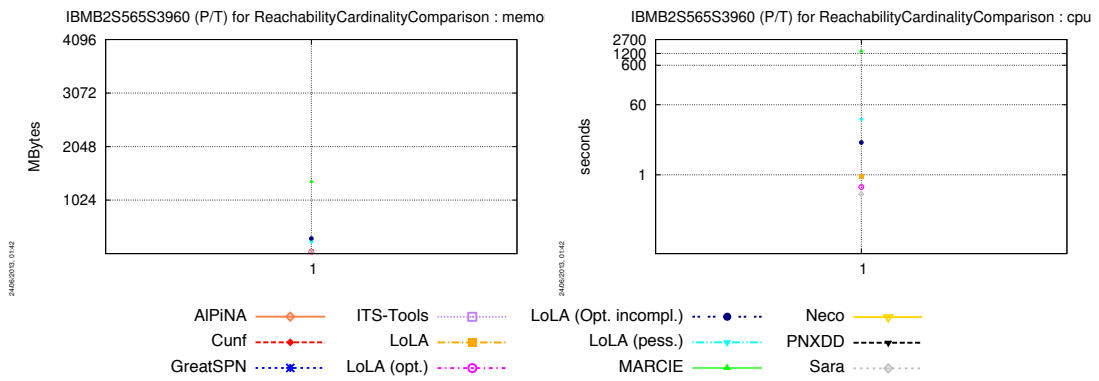
TokenRing (colored) No instance of this model could be computed for the **ReachabilityCardinality-Comparison** examination.

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).

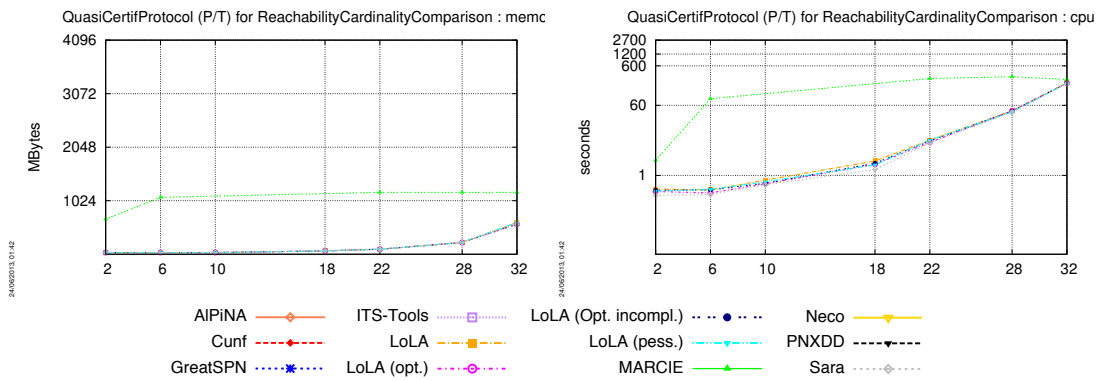


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

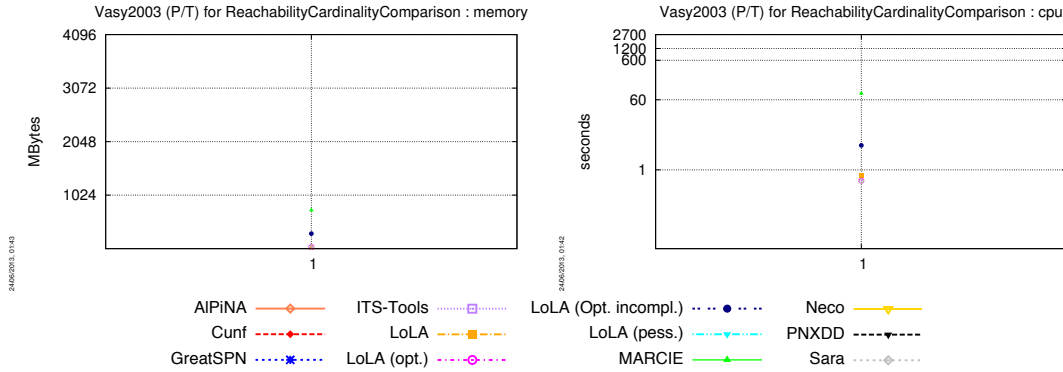


QuasiCertifProtocol (colored) No instance of this model could be computed for the **Reachability-CardinalityComparison** examination.

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 “Surprise” 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	FFFFFFF	nc	nc	nc	nc	nc	nc	nc	
03	nc	FTFTFFF	nc	nc	nc	nc	nc	nc	nc	
04	nc	mp	nc	nc	nc	nc	nc	nc	nc	
05	nc	mp	nc	nc	nc	nc	nc	nc	nc	
07	nc	mp	nc	nc	nc	nc	nc	nc	nc	
10	nc	mp	nc	nc	nc	nc	nc	nc	nc	
CSRepetitions (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara	
02	FFFFFFF	nc	TFFTFT	TFFTFT	-F-F-F-	TFFTFT	FFFFFFF	cc		
03	FTFTFFF	nc	TFFTFT	TFFTFT	-F-FFF-	TFFTFT	FFFFFFF	cc		
04	FFFFFFF	nc	-F-F-F	-F-F-F	-F-F-F	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	TFFTTF	TFFTTF	-F-F-F	TFFTTF	FFFFFFF	cc		
015	nc	nc	TTTTFFF	TTTTFFF	--FFFF	to	FFFFFFF	cc		
020	nc	nc	to	to	FFFF-F-	to	FFFFFFF	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	pass	Marcie Sara
2	nc	FFFFFFTF	nc	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFTF	nc	nc	nc	nc	nc	nc	nc
4	nc	cc	nc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (colored)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
02	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
10	nc	cc	nc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
02	nc	nc	TFFFFFFF	TFFFFFFF	-FFFFFFF	TFFFFFFF	FFFFFFF	cc	
10	nc	nc	cc	cc	cc	cc	FFFFFFF	cc	
Echo (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
d02r09	nc	nc	-F-FFFFF	-F-FFFFF	to	to	to	cc	
d02r11	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	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	FFFFFFF	FFFFFFF	FFFFFFF	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	pass	Marcie Sara
010	nc	FFFFFFF	TFTFFFF	TFTFFFF	-F-FFFF	TFTF-TFT	FFFFFFF	cc	
020	nc	FFFFFFF	FFFFFFTF	FFFFFFTF	FFFFF-FF	FF-FFTFT	FFFFFFF	---T	
050	nc	FFFF	FFFFFFF	FFFFFFF	FFFFFFF	FF-F-FF	FFFFFFF	cc	
100	nc	FFFF	to	to	to	-F-FF--	FFFFFFF	cc	
200	nc	FFFFFFF	FFFFF-F-	FFFFF-F-	to	to	FFFFFFF	cc	
500	nc	FFFF	-FFFFFFF	-FFFFFFF	to	to	FFFFFFF	cc	
FMS (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
002	FFFFFFTF	nc	FFFFFFTT	FFFFFFTT	FFFFF--	-F-FF--	FFFFFFF	cc	
005	FFFFFFF	nc	TFFTTF	TFFTTF	-FFF-F-	-FF-TF-	FFFFFFF	cc	
010	FFFFFFF	nc	TFTFFFF	TFTFFFF	-F-FFFF	---F-	FFFFFFF	cc	
020	FFFFFFF	nc	-F-FFFF	-F-FFFF	-F-FFFF	-F-FF-F-	FFFFFFF	cc	
050	FFFFFFF	nc	--F-FFF	--F-FFF	--F-FFF	--F-FFF	FFFFFFF	---TTT	
100	F	cc	-F-FFFF	-F-FFFF	-F-FFFF	-F-FFFF	FFFFFFF	cc	
200	to	nc	-F-FFFF	-F-FFFF	-F-FFFF	-F-FF-F-	to	cc	
500	to	nc	--FFFF	--FFFF	--FFFF	--FFFF	to	cc	
GlobalResAlloc (colored)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
03	nc	FFFFFFTF	nc	nc	nc	nc	nc	nc	nc
05	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
06	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
07	nc	mp	nc	nc	nc	nc	nc	nc	nc
09	nc	mp	nc	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc	nc
11	nc	mp	nc	nc	nc	nc	nc	nc	nc
GlobalResAlloc (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
03	FFFFFFTF	nc	FTFTFT	FTFTFT	FF-FF-F-	to	FFFFFFF	cc	
05	cc	nc	to	to	to	cc	to	cc	
Kanban (P/T)									

Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa	pass	Marcie	Sara
0005	FFFFFFFF	nc	TFTFFTFT	TFTFFTFT	-F-FF-F-	-F-FF-F-	FFFTTFFF	cc		
0010	FFFFFFFF	nc	TFTFFTFF	TFTFFTFF	-F-FFFF	--F-F-	FFFTTFFF	----	T	
0020	FFFFFFFF	nc	-F-FFFF	-F-FFFF	to	-F-FFFF-	FFFTTFFF	cc		
0050	to	nc	-F-FFFF	-F-FFFF	-F-FFFF	--FFFF	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	pass	Marcie	Sara
2	nc	FFFFFFFFTF	nc	nc	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
4	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
5	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
8	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
LamportFastMutex (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa	pass	Marcie	Sara
2	nc	nc	cc	cc	cc	cc	cc	FFFTTFFF	cc	cc
3	nc	nc	cc	cc	cc	cc	cc	FFFTTFFF	cc	cc
4	nc	nc	cc	cc	cc	cc	cc	FFFTTFFF	cc	cc
5	nc	nc	cc	cc	cc	cc	cc	to	cc	cc
6	nc	nc	cc	cc	cc	cc	cc	to	cc	cc
7	nc	nc	cc	cc	cc	cc	cc	to	cc	cc
8	nc	nc	cc	cc	cc	cc	cc	to	cc	cc
MAPK (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa	pass	Marcie	Sara
008	FFFFFFFF	nc	TTTTTFFF	TTTTTFFF	--F-FFF	--F-F-	FFFTTFFF	cc		
020	FFFFFFFF	nc	-FFFFFFF	-FFFFFFF	-FFFFFFF	--FFFF	FFFTTFFF	cc		
040	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FFFF	FFFTTFFF	cc		
080	to	nc	-F-FFFF	-F-FFFF	-F-FFFF	to	FFFTTFFF	cc		
160	to	nc	-F-FFFF	-F-FFFF	-F-FFFF	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	pass	Marcie	Sara
2	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
4	nc	cc	nc	nc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
8	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
NeoElection (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa	pass	Marcie	Sara
2	nc	nc	cc	cc	cc	cc	cc	FFFTTFFF	cc	cc
3	nc	nc	TFFFT--	TFFFT--	-FFF--	cc	FFFTTFFF	cc	cc	cc
4	nc	nc	---FF-	---FF-	to	to	to	cc	cc	cc
5	nc	nc	---FFF	---FFF	---FFF	---FFF	to	cc	cc	cc
6	nc	nc	to	to	to	to	to	cc	cc	cc
7	nc	nc	cc	cc	cc	cc	cc	to	cc	cc
8	nc	nc	to	to	to	to	to	to	cc	cc
PermAdmissibility (colored)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa	pass	Marcie	Sara
01	nc	FTFTTFFF	nc	nc	nc	nc	nc	nc	nc	nc
02	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
05	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc

50	nc	mp	nc	nc	nc	nc	nc	nc	nc
PermAdmissibility (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLA	opt LoLa	opt inc LoLa	pass	Marcie	Sara
01	to	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	cc
02	FTFTTTF	nc	-F-FFFF-	-F-FFFF-	to	to	to	cc	cc
05	TTTTFFFF	nc	FFFFF-F-	FFFFF-F-	to	to	to	cc	cc
10	FFFFFFTF	nc	to	to	to	to	to	cc	cc
20	FTFTTTF	nc	-F-F-F-	-F-F-F-	to	to	cc	cc	cc
50	TTTTTFF	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	to	cc	cc
Peterson (colored)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	Marcie	Sara
2	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
4	nc	mp	nc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc	nc
Peterson (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	Marcie	Sara
2	nc	nc	TFTFFFF	TFTFFFF	-F-FFFF	-F-F-FFF	FFFTTFFF	cc	cc
3	nc	nc	TFTF--	TFTF--	-F-FF--	-F-F--	FFFFFFF	cc	cc
4	nc	nc	--FF--	--FF--	to	to	to	cc	cc
5	nc	nc	-F-FF--	-F-FF--	to	to	to	cc	cc
6	nc	nc	cc	cc	cc	cc	to	cc	cc
7	nc	nc	FFFF--	FFFF--	FFFF--	FFFF--	to	cc	cc
Philosophers (colored)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	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	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	Marcie	Sara
000005	FFFFFFF	nf	TFTFFFF	TFTFFFF	-F-FFFF	--F-FFF	FFFTTFFF	cc	cc
000010	FFFFFFF	nf	TTTTFFF	TTTTFFF	-FFFFF	TTTTFFF	FFTTTFFF	cc	cc
000020	FFFFFFF	nf	-F-FFFF	-F-FFFF	-F-FFFF	to	FFFTTFFF	cc	cc
000050	to	nf	cc	cc	cc	cc	FFFTTFFF	cc	cc
000100	mp	nf	cc	cc	cc	cc	FFFTTFFF	cc	cc
000200	mp	nf	cc	cc	cc	cc	FFFTTFFF	cc	cc
000500	to	nf	cc	cc	cc	cc	FFFTTFFF	cc	cc
001000	mp	nf	cc	cc	cc	cc	FFFTTFFF	cc	cc
002000	mp	nf	mp	mp	mp	mp	to	mp	mp
005000	mp	nf	to	to	to	to	to	to	to
010000	cc	nf	to	to	to	to	to	to	to
PhilosophersDyn (colored)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	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	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pass	Marcie Sara
03	FFFFFFF	nc	TTTTFTF	TTTTFTF	--F-FFF	TTTTFTF	FFFFFFF	cc		
10	mp	nc	TTTTFTF	TTTTFTF	--F-F-	TTTTFTF	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	pass	Marcie Sara
nf	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf
Railroad (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pass	Marcie Sara
005	nc	nc	TTTTFTF	TTTTFTF	--FF-F-	TTTTFTF	FFFFFFF	cc		
010	nc	nc	FFFFFFT	FFFFFFT	FFFFF--	FFFFF--	FFFFFFF	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		
ResAllocation (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pass	Marcie Sara
R002C002	nc	nc	TFFFFFF	TFFFFFF	-FFFF-FF	-FFF-F-	TTTTFTF	----T		
R003C002	nc	nc	TFFFFFF	TFFFFFF	-FFFFFFF	TFFFFFF-	TTTTFTF	cc		
R003C003	nc	nc	TTTTFTF	TTTTFTF	FFFFF-F-	FFFFF-F-	TTTTFTF	cc		
R003C005	nc	nc	TFFFFFF	TFFFFFF	FFFFF-FF	-F-FTFF	TTTTFTF	cc		
R003C010	nc	nc	TTTTFTF	TTTTFTF	--F-FFF	-TF-FF	TTTTFTF	cc		
R003C015	nc	nc	TTTTFTF	TTTTFTF	TTTTFTF	TTTTFTF	TTTTFTF	cc		
R003C020	nc	nc	TTTTFTF	TTTTFTF	TTTTFTF	TTTTFTF	TTTTFTF	----TT		
R003C050	nc	nc	-F-FFFF	-F-FFFF	to	to	TTTTFTF	cc		
R003C100	nc	nc	-FFFFFFF	-FFFFFFF	to	to	TTTTFTF	cc		
R005C002	nc	nc	TFFFFFF	TFFFFFF	-F-FFFF	TFFFFFF	TTTTFTF	----T		
R010C002	nc	nc	TTTTTFT	TTTTTFT	---F-	TTTT-TFT	TTTTFTF	cc		
R015C002	nc	nc	TTTTFTF	TTTTFTF	TTTTFTF	TTTTFTF	TTTTFTF	----T		
R020C002	nc	nc	TFTFTTT	TFTFTTT	-F-FF--	TFTFTTT	TTTTFTF	cc		
R050C002	nc	nc	T-T-FFFF	T-T-FFFF	to	to	TTTTFTF	cc		
R100C002	nc	nc	-F-FFFF	-F-FFFF	-F-FFFF	-F-FFFF	TTTTFTF	cc		
Ring (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pass	Marcie Sara
none	nc	nc	FFFFF-F-	FFFFF-F-	FFFFF-F-	to	TTTTFTF	cc		
RwMutex (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pass	Marcie Sara
r0010w0010	nc	nc	TFTFTFT	TFTFTFT	-F-FF-F-	TFTF--	TTTTFTF	cc		
r0010w0020	nc	nc	TFTFTTF	TFTFTTF	-F-F-FF	TFTF--	TTTTFTF	cc		
r0010w0050	nc	nc	TFTFTTF	TFTFTTF	-F-FF-FF	---TF	TTTTFTF	cc		
r0010w0100	nc	nc	TTTTFTF	TTTTFTF	TTTTFTF	cc	TTTTFTF	cc		
r0010w0500	nc	nc	TFFFFFF	TFFFFFF	-FFFF-FF	TF--TF	TTTTFTF	cc		
r0010w1000	nc	nc	TTTTFTF	TTTTFTF	TTTTFTF	TTTTFTF	TTTTFTF	cc		
r0010w2000	nc	nc	TFTFTTF	TFTFTTF	-F-F-FF	to	to	----TT		
r0020w0010	nc	nc	TTTTFTF	TTTTFTF	--FFFF	--F-F-	to	cc		
r0100w0010	nc	nc	TTTTFTF	TTTTFTF	--F-FFF	to	cc	cc		
r0500w0010	nc	nc	TTTTFTF	TTTTFTF	--F-FF	--F-F-	cc	cc		
r1000w0010	nc	nc	TTTTFTF	TTTTFTF	TTTTFTF	-F-F-F-	cc	cc		
r2000w0010	nc	nc	TTTTFTF	TTTTFTF	TTTTFTF	to	cc	cc		
SharedMemory (colored)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pass	Marcie Sara
000005	nc	cc	nc	nc	nc	nc	nc	nc	nc	nc
000010	nc	cc	nc	nc	nc	nc	nc	nc	nc	nc
000020	nc	cc	nc	nc	nc	nc	nc	nc	nc	nc
000050	nc	cc	nc	nc	nc	nc	nc	nc	nc	nc
000100	nc	cc	nc	nc	nc	nc	nc	nc	nc	nc
000200	nc	cc	nc	nc	nc	nc	nc	nc	nc	nc
000500	nc	cc	nc	nc	nc	nc	nc	nc	nc	nc
001000	nc	cc	nc	nc	nc	nc	nc	nc	nc	nc
002000	nc	cc	nc	nc	nc	nc	nc	nc	nc	nc

005000	nc	cc	nc	nc	nc	nc	nc	nc	nc
010000	nc	cc	nc	nc	nc	nc	nc	nc	nc
020000	nc	cc	nc	nc	nc	nc	nc	nc	nc
050000	nc	cc	nc	nc	nc	nc	nc	nc	nc
100000	nc	cc	nc	nc	nc	nc	nc	nc	nc
SharedMemory (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
000005	FTTTTTT	cc	TTTTTTF	TTTTTTF	--FF-F	--FF-F	FFTTTTF	cc	
000010	FTTTTTT	cc	TTTTTTF	TTTTTTF	---FF-	to	TTTTTTF	cc	
000020	mp	cc	-TTTTTTF	-TTTTTTF	-TTTTTTF	to	TTTTTTF	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	pass	Marcie Sara
02	nc	TTTTTTF	nc	nc	nc	nc	nc	nc	nc
05	nc	TTTTTTF	nc	nc	nc	nc	nc	nc	nc
10	nc	TTTTTTF	nc	nc	nc	nc	nc	nc	nc
15	nc	mp	nc	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	nc	nc	nc	nc	nc
SimpleLoadBal (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
02	nc	nc	TTTTTTF	TTTTTTF	-TTTTTTF-	-TTTTTTF-	TTTTTTF	cc	
05	nc	nc	TTTTTTF	TTTTTTF	-TTTTTTF-	-TTTTTTF-	TTTTTTF	cc	
10	nc	nc	to	to	to	to	TTTTTTF	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	pass	Marcie Sara
005	nf	nf	nf	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf	nf	nf	nf
500	nf	nf	nf	nf	nf	nf	nf	nf	nf
TokenRing (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
005	nf	nf	nf	nf	nf	nf	nf	nf	nf
010	nf	nf	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf	nf	nf
050	nf	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	pass	Marcie	Sara	
002	cc	cc		cc		TTTTTTF	cc		
005	cc	cc		cc		TTTTTTF	cc		
010	cc	cc		cc		TTTTTTF	cc		
020	cc	cc		cc		TTTTTTF	cc		
050	cc	cc		cc		cc	cc		
100	cc	cc		cc		cc	cc		
200	cc	cc		cc		cc	cc		
500	cc	cc		cc		cc	to	cc	
IBMB2S565S3960 (P/T)									
instances	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie	Sara	
none	TTTTTTF	TTTTTTF	TTTTTTF	TTTTTTF	TTTTTTF-	TTTTTTF	cc		
QuasiCertifProtocol (colored)									
instances	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	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	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pass Marcie	Sara
02	cc	cc	cc	cc	cc	FFFFFF	cc
06	cc	cc	cc	cc	cc	FFFFFF	cc
10	cc	cc	cc	cc	cc	to	cc
18	cc	cc	cc	cc	cc	to	cc
22	cc	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc	cc
32	cc	cc	cc	cc	cc	cc	cc
Vasy2003 (P/T)							
instances	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pass Marcie	Sara
none	FF--FFF	FF--FFF	FF--FFF	FF--FFF	to	FFFFFF	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 LoLa	inc LoLa	pass Marcie	Sara
Total Score	42	58	174	174	148	106	122	34		
CSRepetitions (Colored)										
	GreatSPN	ITS	Tools	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pass Marcie	Sara
1st instance	0	1	0	0	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0	0
subtotal	0	5	0	0	0	0	0	0	0	0
CSRepetitions (P/T)										
	GreatSPN	ITS	Tools	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pass Marcie	Sara
1st instance	1	0	1	1	1	1	1	1	1	0
instances	3	0	4	4	4	4	2	2	2	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	2	2	2	2	0	0	0	0
subtotal	4	0	7	7	7	7	3	3	3	0
Dekker (P/T)										
	GreatSPN	ITS	Tools	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pass Marcie	Sara
1st instance	0	0	1	1	1	1	1	1	1	0
instances	0	0	4	4	4	5	1	3	3	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	2	2	2	2	0	0	0	0
subtotal	0	0	7	7	8	2	4	0	0	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	0
instances	0	2	0	0	0	0		0	0	0
max reached	0	0	0	0	0	0		0	0	0
best	0	2	0	0	0	0		0	0	0
subtotal	0	5	0	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	0
instances	0	1	0	0	0	0		0	0	0
max reached	0	0	0	0	0	0		0	0	0
best	0	2	0	0	0	0		0	0	0
subtotal	0	4	0	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	1	0
instances	0	0	1	1	1	1		1	2	0
max reached	0	0	0	0	0	0		0	2	0
best	0	0	0	0	0	0		0	2	0
subtotal	0	0	2	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		1	0	1
instances	0	0	9	9	2	2		2	0	3
max reached	0	0	2	2	0	0		0	0	2
best	0	0	2	2	0	0		0	0	2
subtotal	0	0	14	14	3	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	1
instances	0	6	5	5	3	3		4	6	1
max reached	0	2	2	2	0	0		0	2	0
best	0	2	2	2	0	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	1
instances	6	0	8	8	8	8		8	6	1
max reached	0	0	2	2	2	2		2	0	0
best	0	0	2	2	2	2		2	0	0
subtotal	7	0	13	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	0
instances	0	3	0	0	0	0		0	0	0
max reached	0	0	0	0	0	0		0	0	0
best	0	2	0	0	0	0		0	0	0
subtotal	0	6	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		0	1	0
instances	1	0	1	1	1	1		0	1	0
max reached	0	0	0	0	0	0		0	0	0
best	2	0	2	2	2	2		0	2	0
subtotal	4	0	4	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	1
instances	4	0	8	8	7	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)												
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)												
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)												
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)												
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)												
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)												
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
ResAllocation (P/T)												
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)												
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
1st instance	1	1	1	1	1	1
instances	1	1	1	1	1	1
max reached	2	2	2	2	2	2
best	2	2	2	2	2	2
subtotal	6	6	6	6	6	6
QuasiCertifProtocol (Colored)						
	LoLA	LoLa	opt	LoLa	opt	inc
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
1st instance	0	0	0	0	0	1
instances	0	0	0	0	0	2
max reached	0	0	0	0	0	0
best	0	0	0	0	0	2
subtotal	0	0	0	0	0	5
Vasy2003 (P/T)						
	LoLA	LoLa	opt	LoLa	opt	inc
1st instance	1	1	1	1	0	1
instances	1	1	1	1	0	1
max reached	2	2	2	2	0	2
best	2	2	2	2	0	2
subtotal	6	6	6	6	0	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



For “Surprise” Models

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

Global

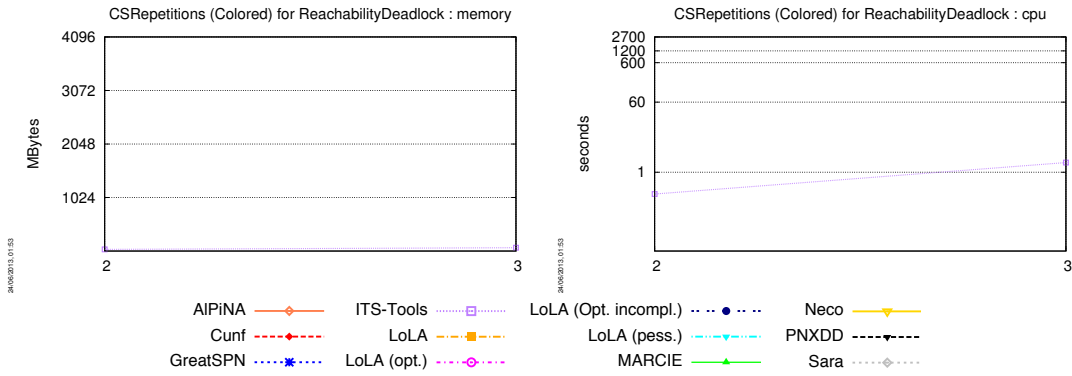
1	1	3
		
LoLA 198 points	LoLa opt 198 points	LoLa opt inc 172 points

8 The ReachabilityDeadlock Examination

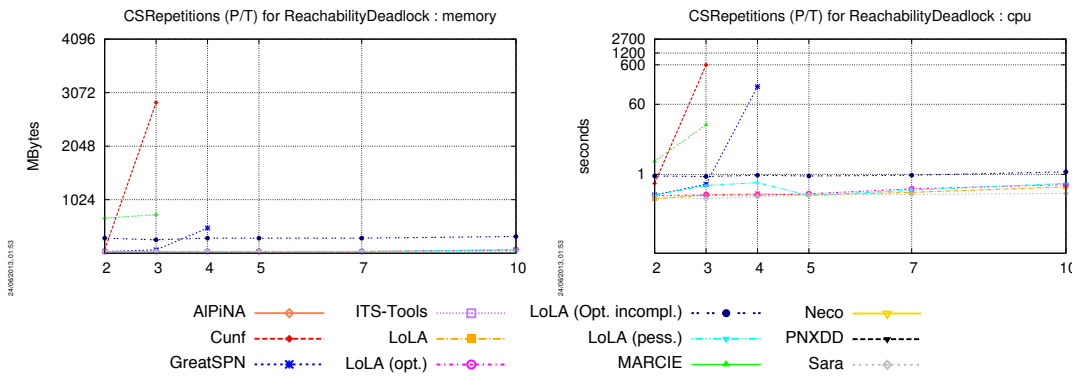
This examination deals with reachability properties dealing with transition deadlocks only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

8.1 Handling of Models by Tools

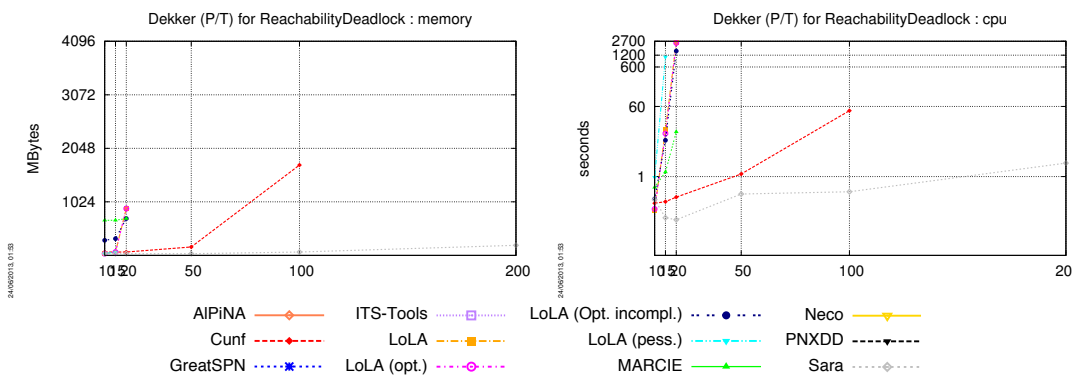
CSRepetitions (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



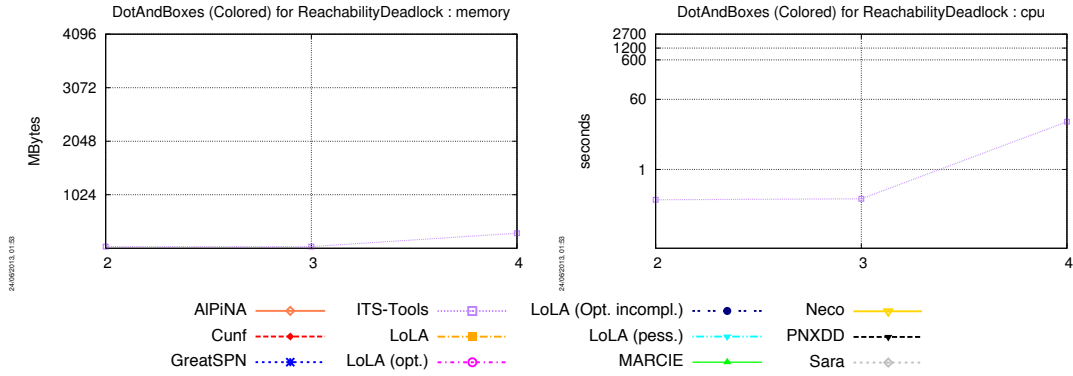
CSRepetitions (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



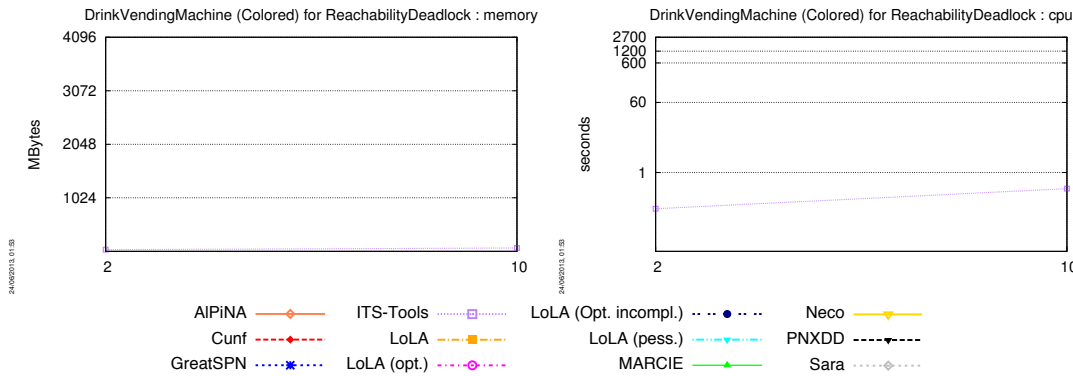
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



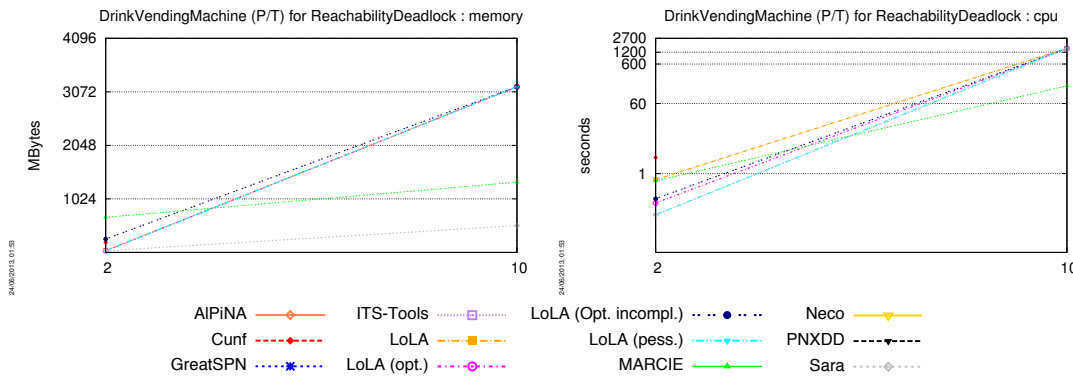
DotAndBoxes (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



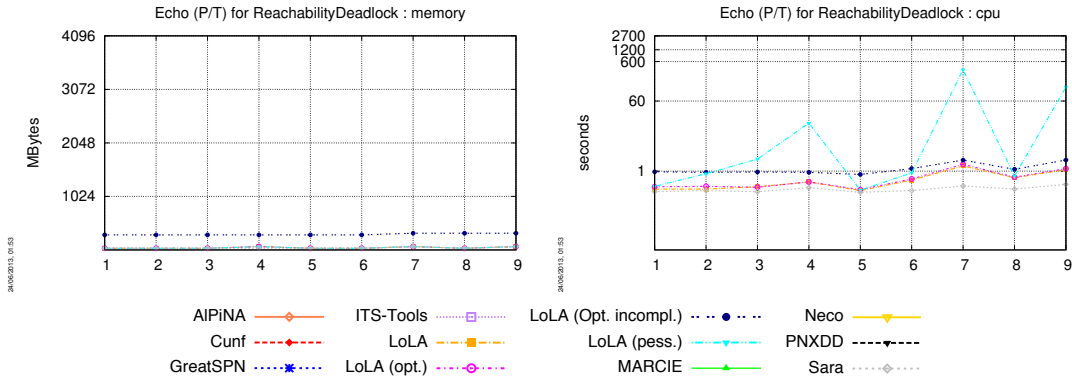
DrinkVendingMachine (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



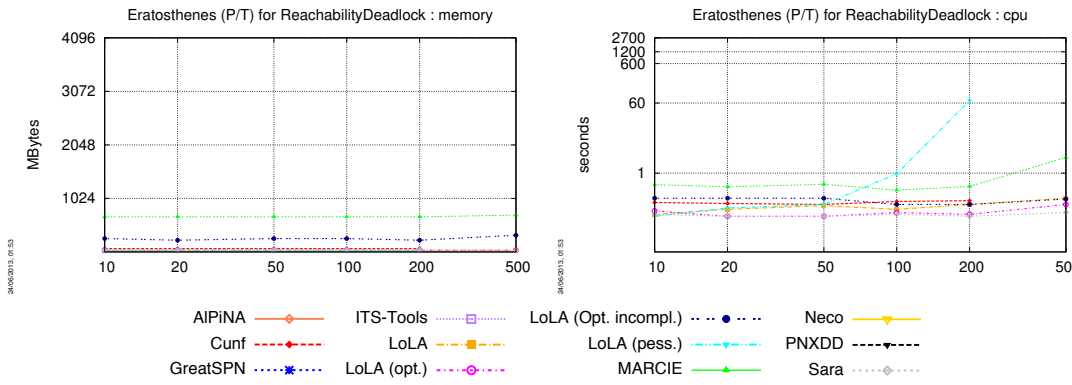
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



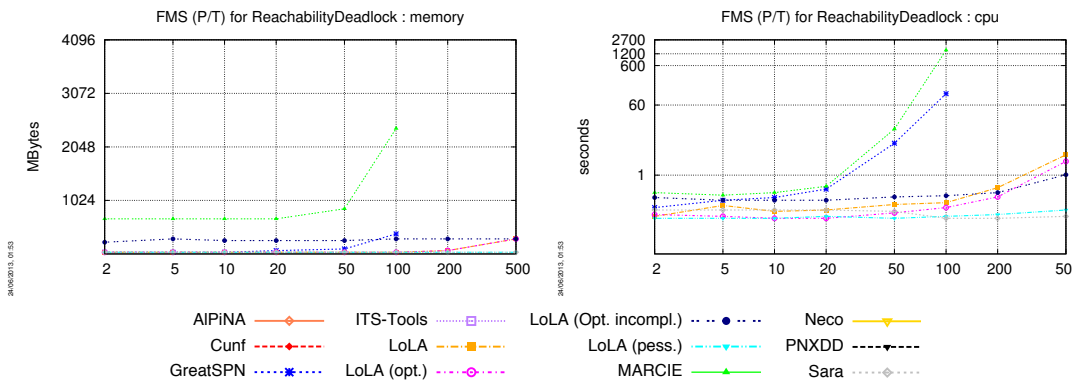
Echo (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



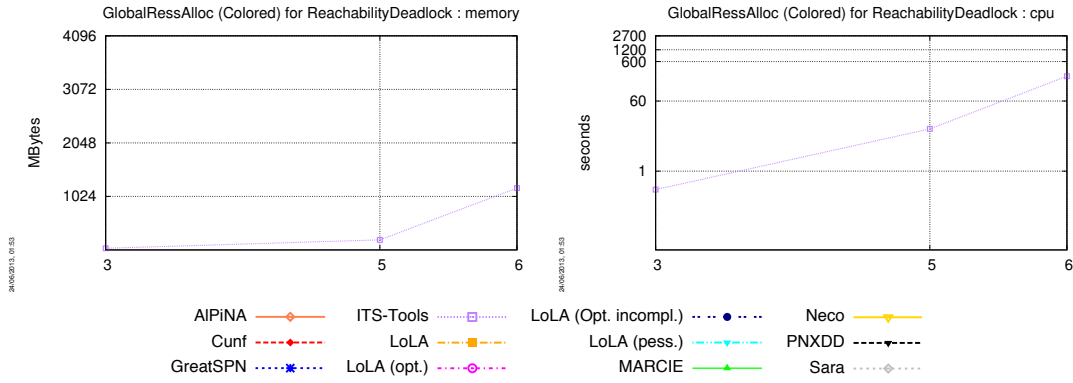
Eratosthenes (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



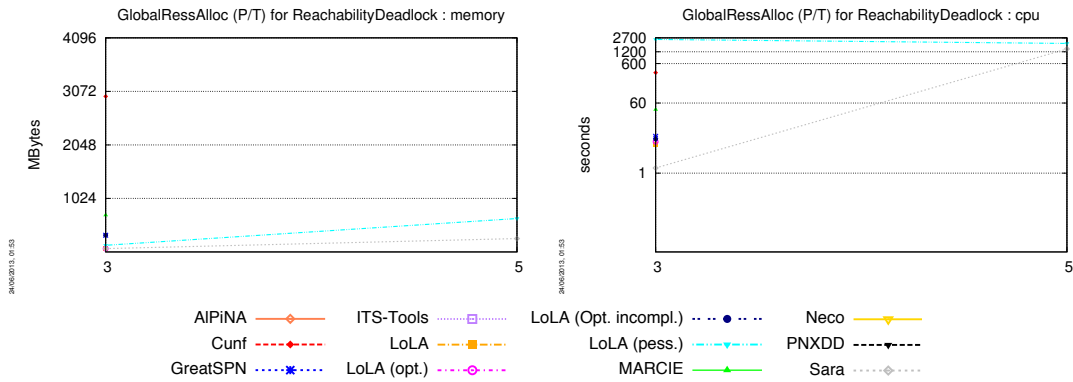
FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



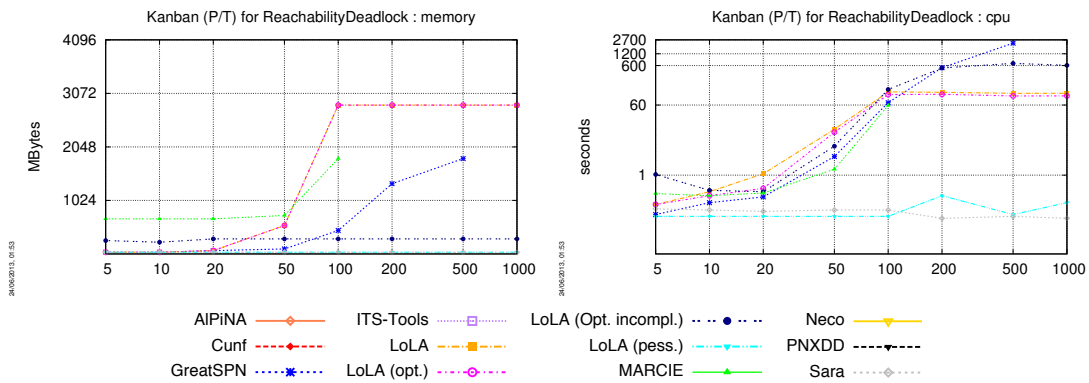
GlobalResAlloc (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



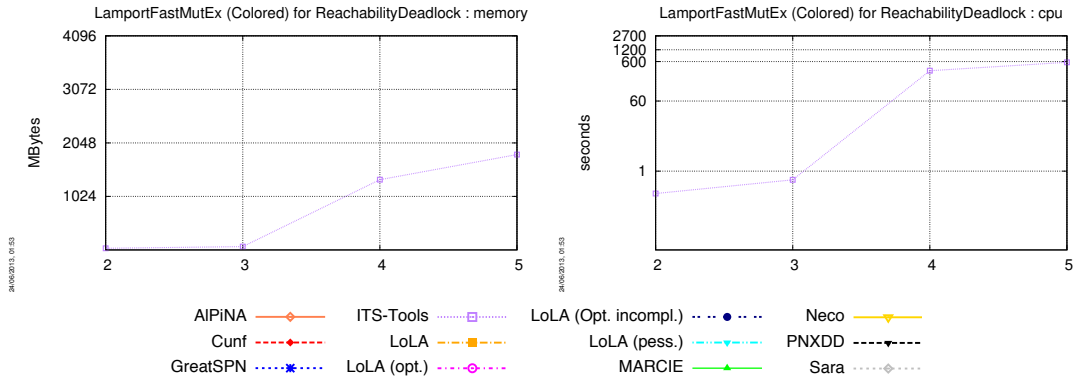
GlobalResAlloc (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



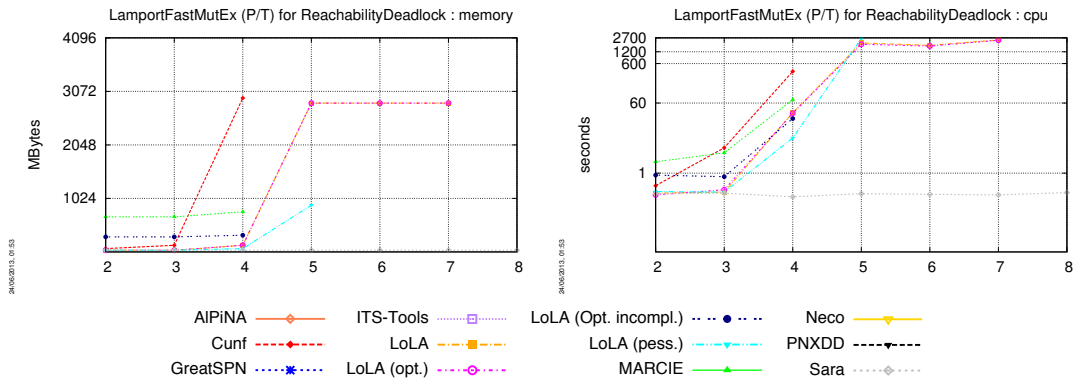
Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



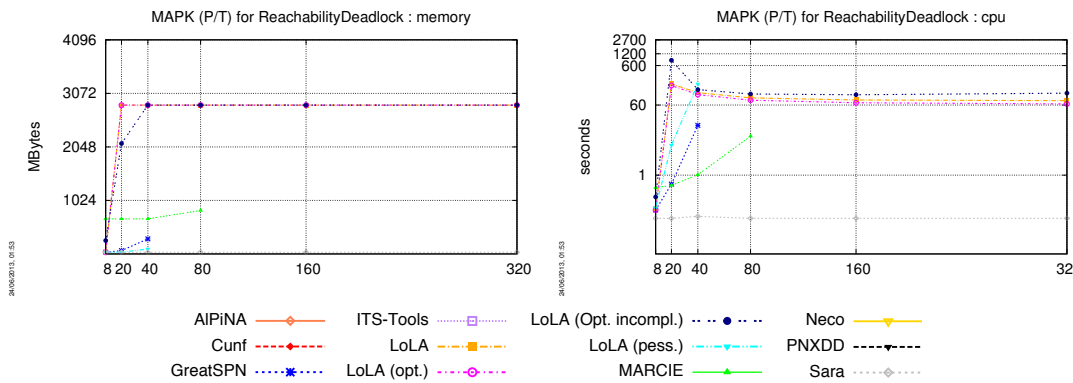
LamportFastMutEx (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



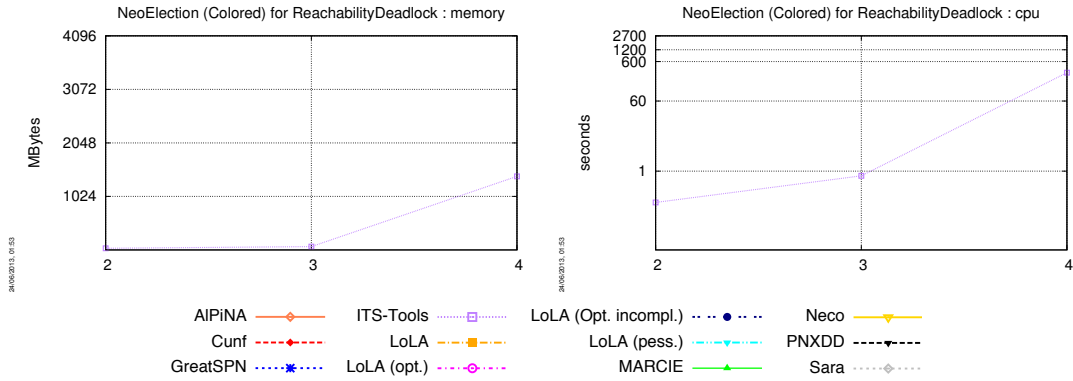
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



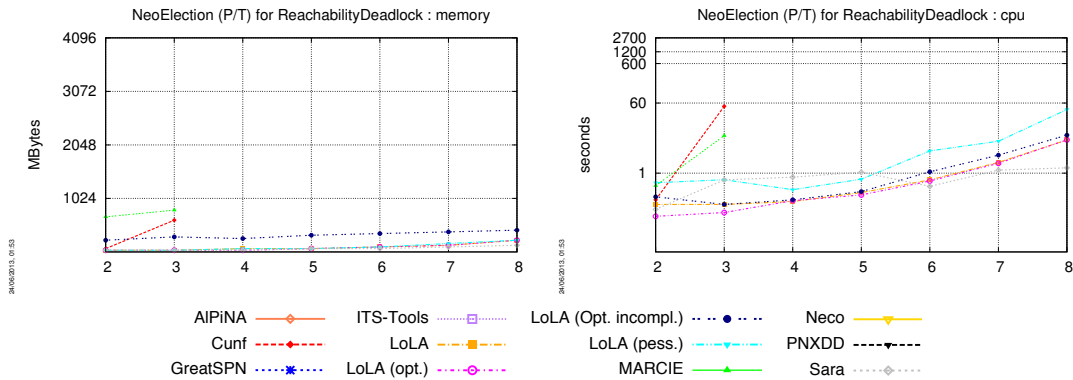
MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



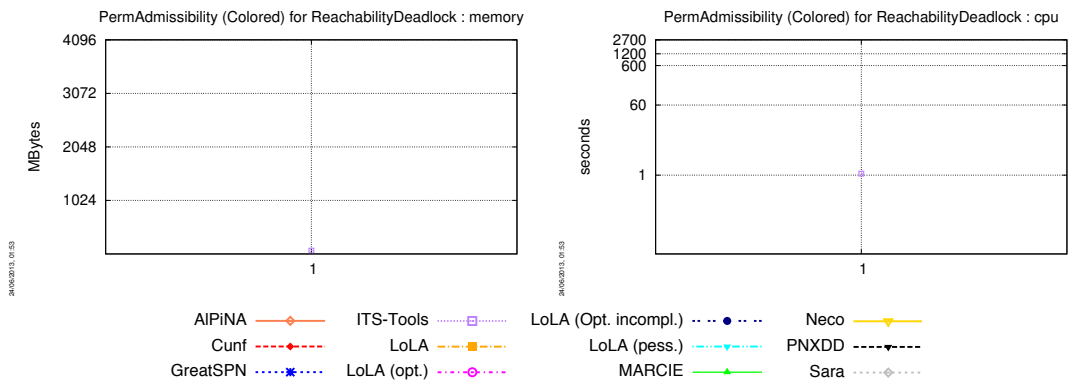
NeoElection (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



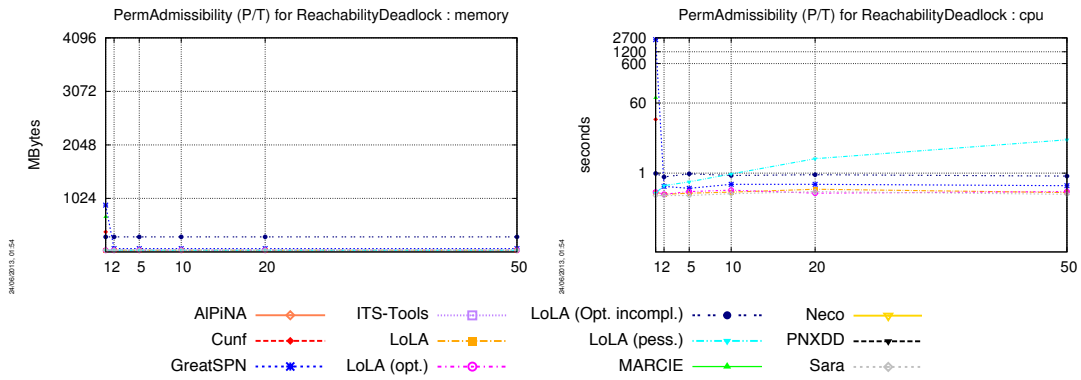
NeoElection (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



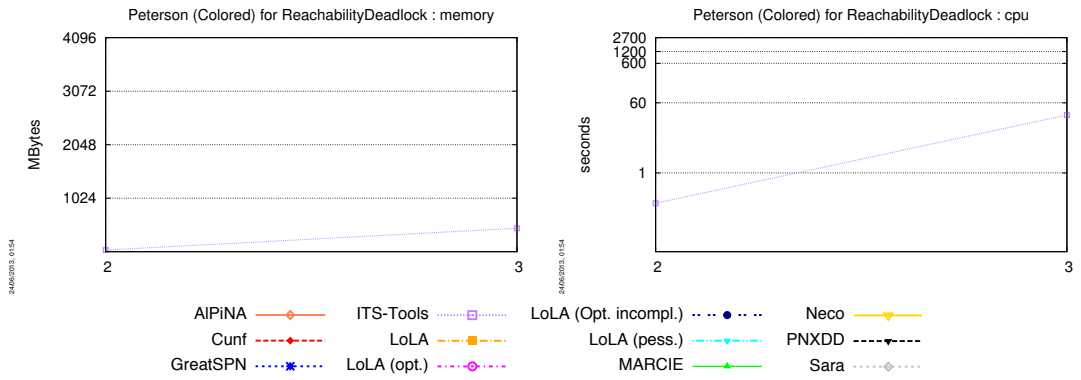
PermAdmissibility (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



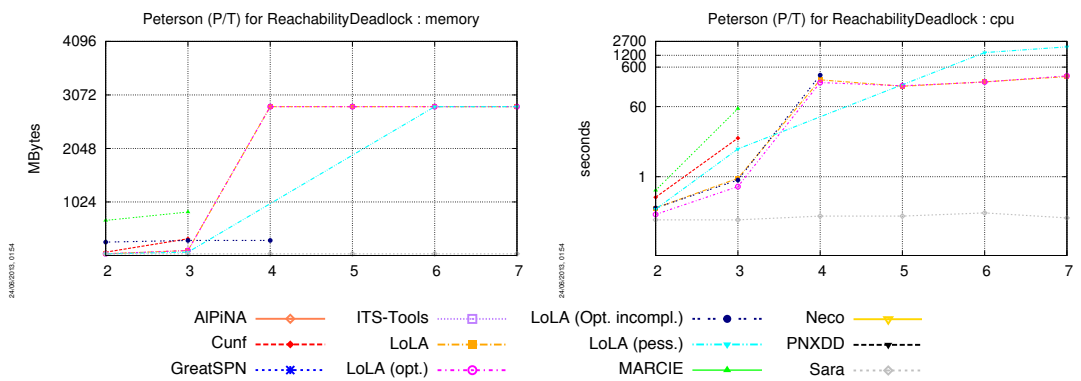
PermAdmissibility (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

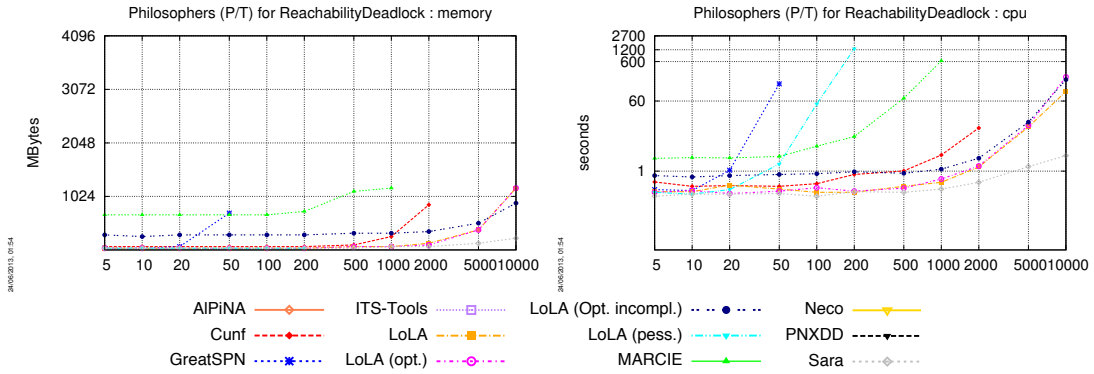


Peterson (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



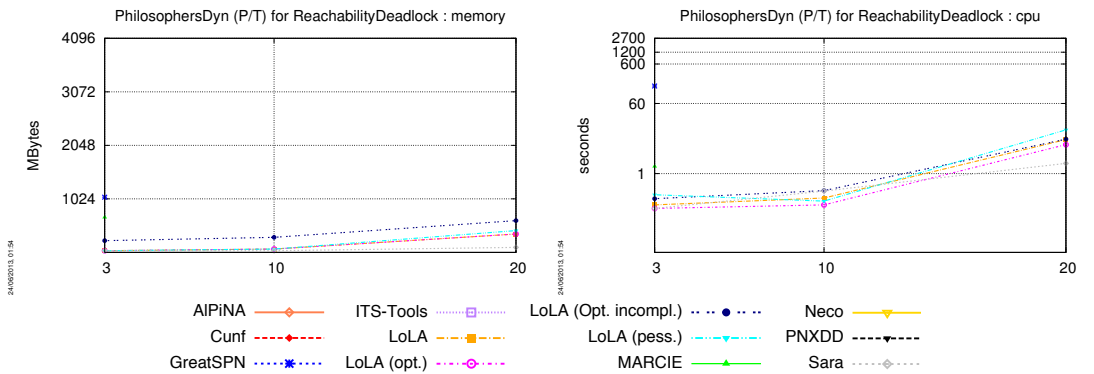
Philosophers (colored) No instance of this model could be computed for the **ReachabilityDeadlock** examination.

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



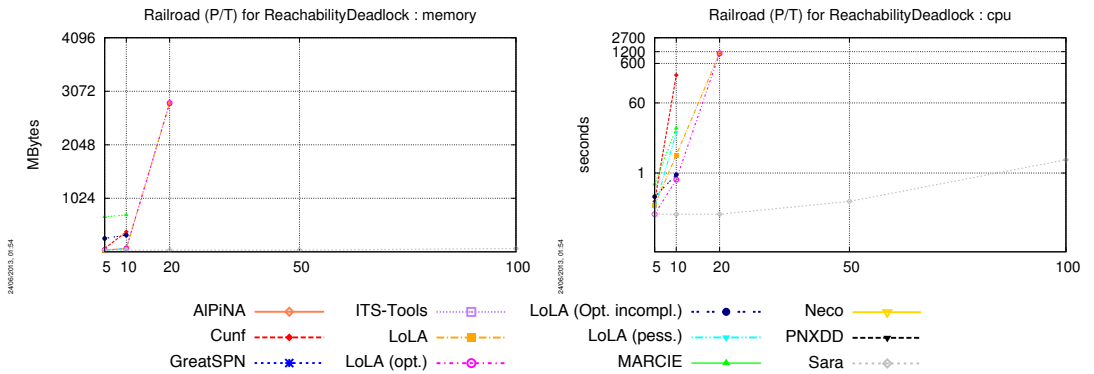
PhilosophersDyn (colored) No instance of this model could be computed for the **ReachabilityDeadlock** examination.

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

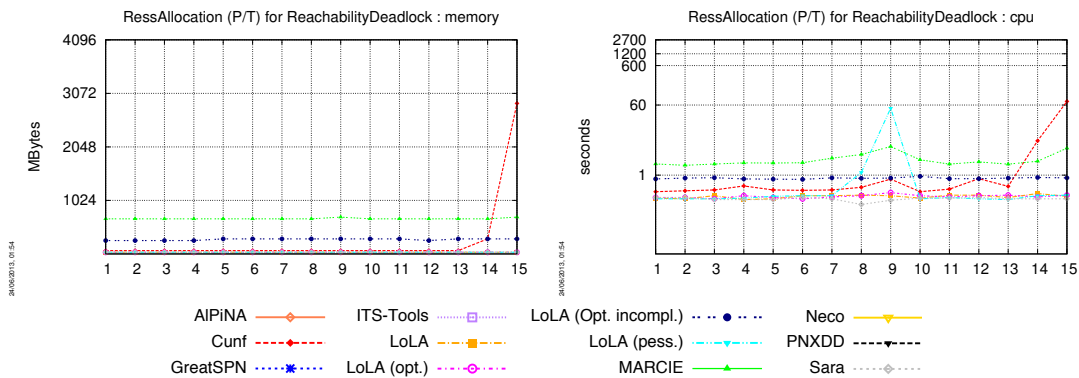


Planning (P/T) No instance of this model could be computed for the **ReachabilityDeadlock** examination.

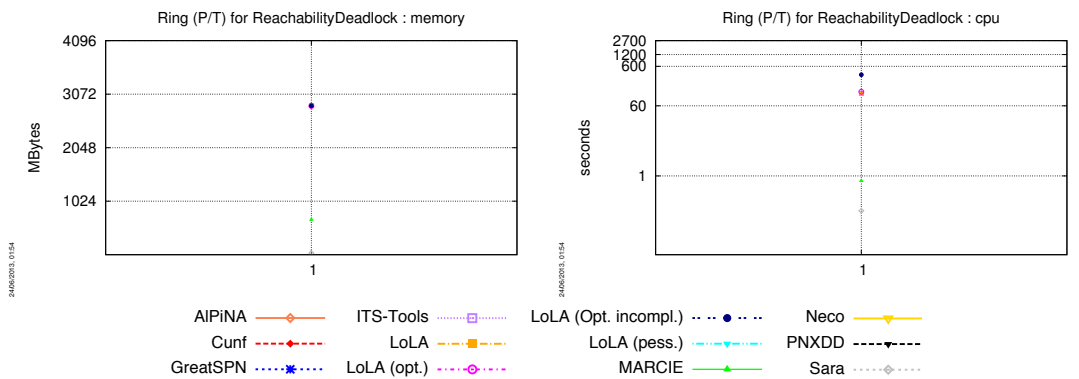
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



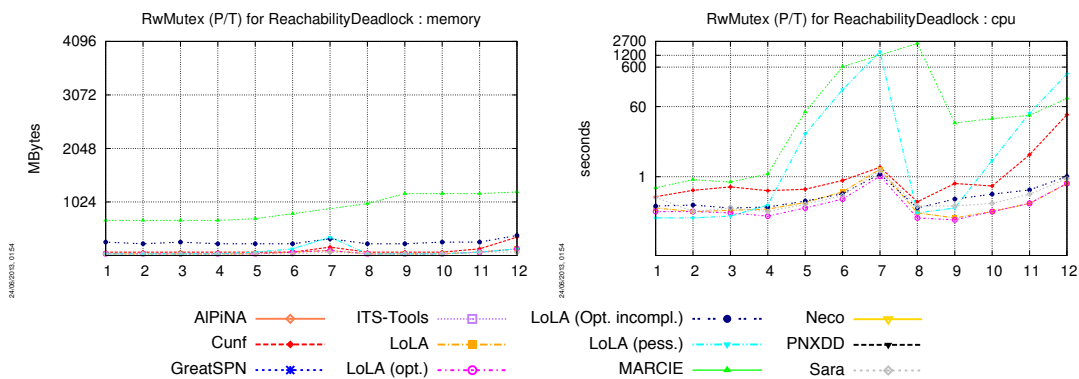
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

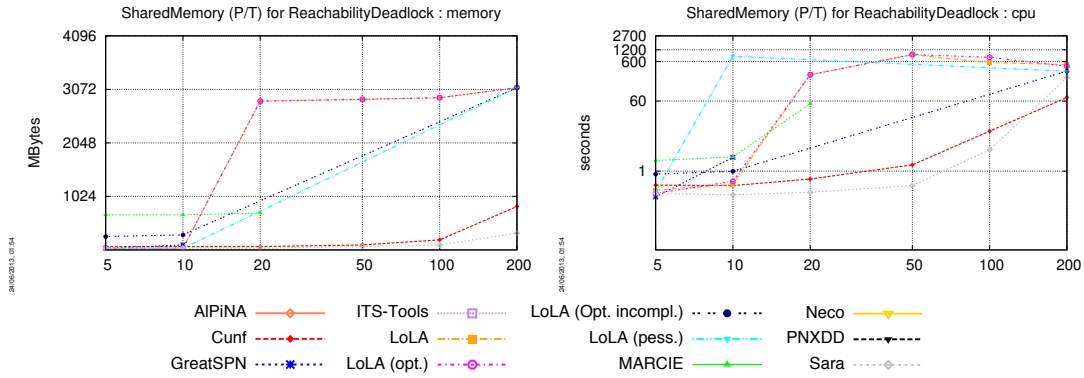


RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

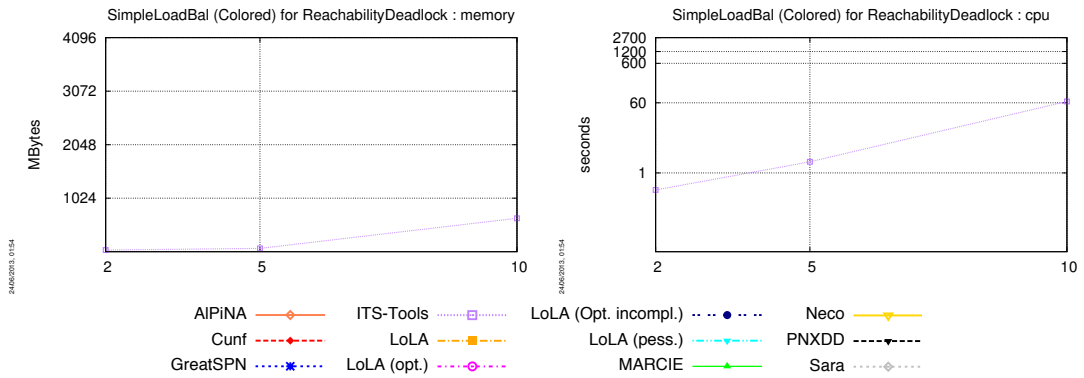


SharedMemory (colored) No instance of this model could be computed for the **ReachabilityDeadlock** examination.

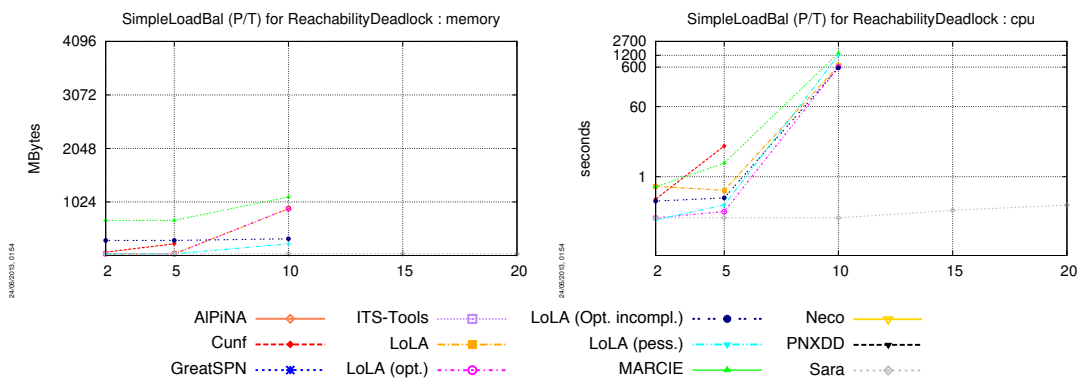
SharedMemory (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

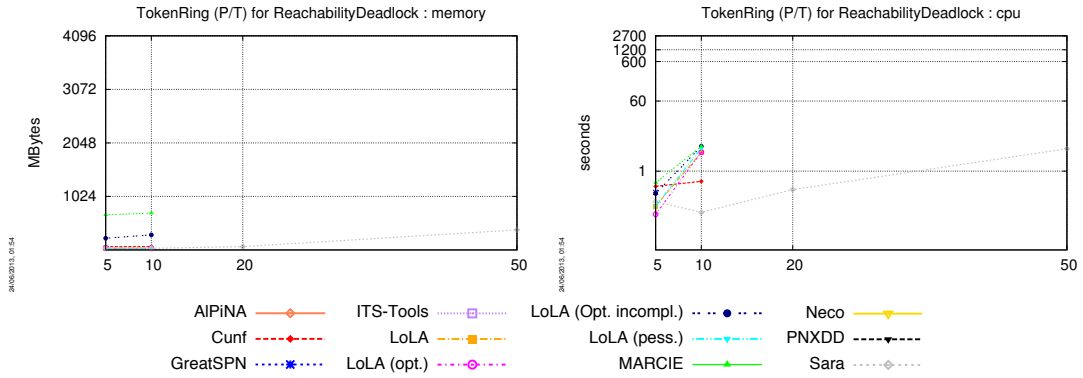


SimpleLoadBal (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

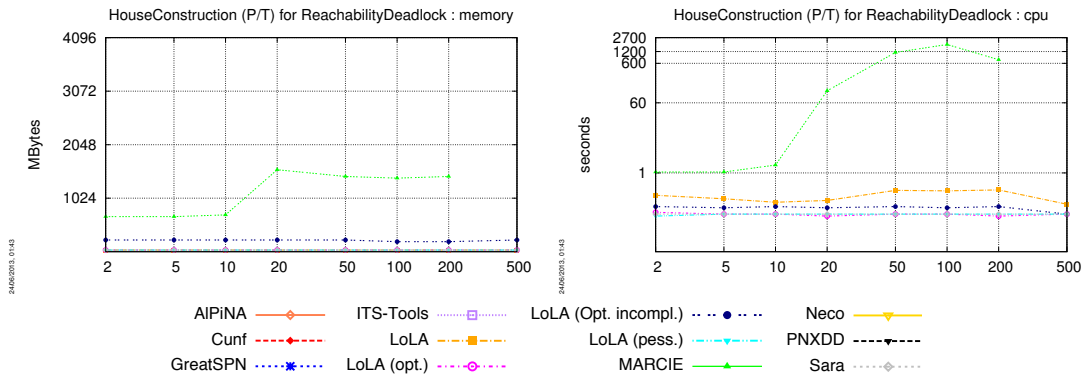


TokenRing (colored) No instance of this model could be computed for the **ReachabilityDeadlock** examination.

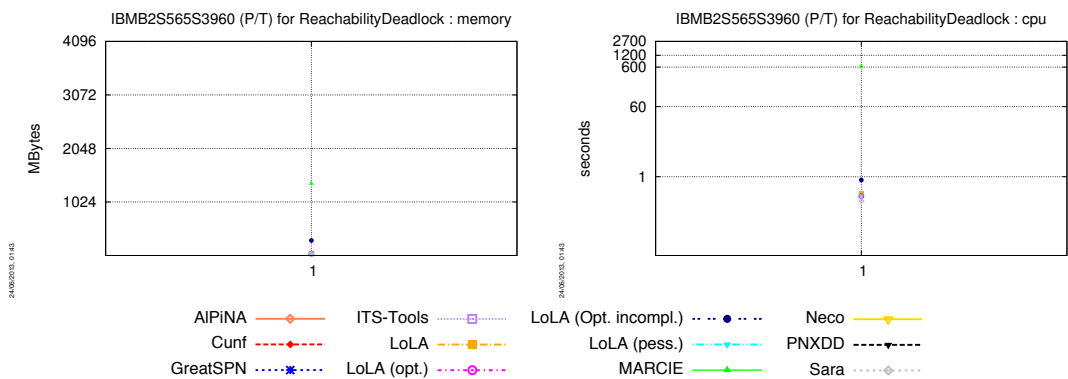
TokenRing (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

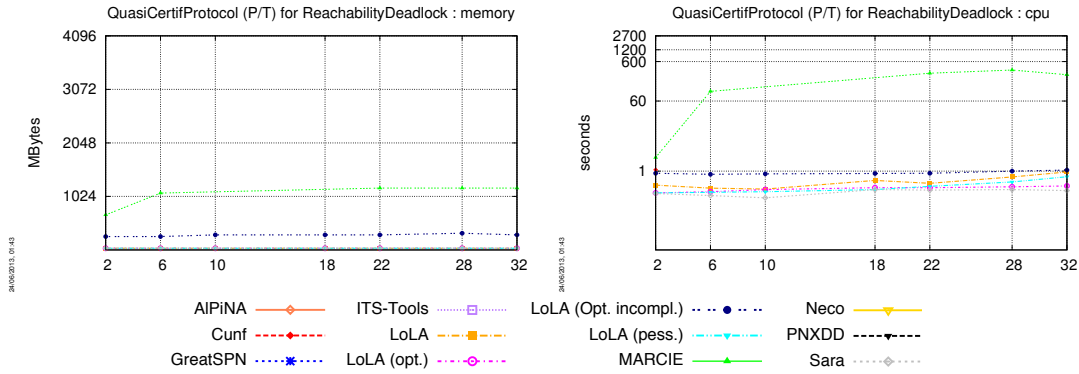


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

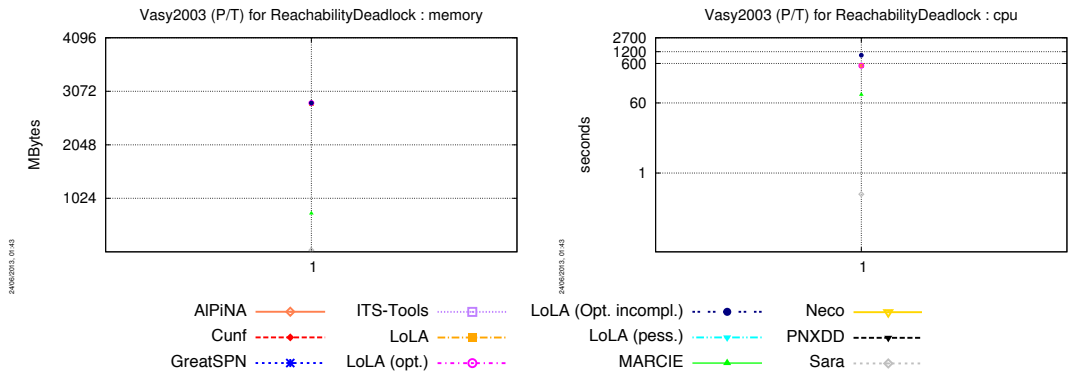


QuasiCertifProtocol (colored) No instance of this model could be computed for the **Reachability-Deadlock** examination.

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 “Surprise” 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.

Instances	CSRepetitions (colored)									
	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara	
02	nc	nc	F	nc	nc	nc	nc	nc	nc	nc
03	nc	nc	F	nc	nc	nc	nc	nc	nc	nc
04	nc	nc	mp	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	mp	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	mp	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	mp	nc	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-
GlobalResAlloc (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
GlobalResAlloc (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	FF	FT	F-		
4	nc	nc	nc	FF	FF	FF	FF	FF	to	F-		
5	nc	nc	nc	FF	FF	FF	FF	FF	to	F-		
6	nc	nc	nc	FF	FF	FF	FF	FF	to	F-		
7	nc	nc	nc	FF	FF	FF	FF	FF	to	F-		
8	nc	nc	nc	FF	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	nc	nc	nc
02	nc	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	mp	nc	nc	nc	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	FF	FF	FT	F-	F-
02	nc	TF	nc	FF	FF	FF	FF	FF	FF	to	F-	F-
05	nc	TF	nc	FF	FF	FF	FF	FF	FF	to	F-	F-
10	nc	TF	nc	FF	FF	FF	FF	FF	FF	to	F-	F-
20	nc	TF	nc	FF	FF	FF	FF	FF	FF	to	F-	F-
50	nc	TF	nc	FF	FF	FF	FF	FF	FF	to	F-	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	nc	nc	nc
3	nc	nc	F	nc	nc	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	mp	nc	nc	nc	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-	F-	FT	FT	FT	F-	F-
3	FT	nc	nc	FT	FT	F-	F-	FT	FT	FT	F-	F-
4	nc	nc	nc	F-	F-	F-	F-	to	to	to	F-	F-
5	to	nc	nc	F-	F-	to	to	to	to	to	F-	F-
6	to	nc	nc	F-	F-	to	to	F-	F-	to	F-	F-
7	to	nc	nc	F-	F-	to	to	F-	F-	to	F-	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	nc	nc	nc
000010	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
100000	nc	nc	nc	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	FF	FF	FT	F-	F-
000010	FF	FF	nf	FF	FF	FF	FF	FF	FF	FT	F-	F-
000020	FF	FF	nf	FF	FF	FF	FF	FF	FF	FT	F-	F-
000050	FF	FF	nf	FF	FF	FF	FF	FF	FF	FT	F-	F-
000100	FF	to	nf	FF	FF	FF	FF	FF	FF	FT	F-	F-

000200	FF	to	nf	FF	FF	FF	FF	FF	FT	F-			
000500	FF	to	nf	FF	FF	FF	FF	to	FT	F-			
001000	FF	mp	nf	FF	FF	FF	FF	to	FT	F-			
002000	FF	mp	nf	FF	FF	FF	FF	to	to	F-			
005000	nc	mp	nf	FF	FF	FF	FF	to	to	F-			
010000	nc	cc	nf	FF	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	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
50	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
80	nc	nc	nc	nc	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	FF	FF	FF	FT	F-	F-
10	nc	mp	nc	FF	FF	FF	FF	FF	FF	FF	to	F-	F-
20	to	mp	nc	FF	FF	FF	FF	FF	FF	FF	to	F-	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	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-	F-	F-	FT	FT	FT	F-	F-
010	FT	nc	nc	FT	FT	F-	F-	F-	FT	FT	FT	F-	F-
020	to	nc	nc	F-	F-	to	to	to	to	to	to	F-	F-
050	to	nc	nc	to	to	to	to	to	to	to	to	F-	F-
100	nc	nc	nc	to	to	to	to	to	to	to	to	F-	F-
ResAllocation (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	FF	FF	FF	FT	F-	F-
R003C002	FF	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	F-
R003C003	FF	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	F-
R003C005	FF	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	F-
R003C010	FF	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	F-
R003C015	FF	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	F-
R003C020	FF	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	F-
R003C050	FF	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	F-
R003C100	FF	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	F-
R005C002	FF	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	F-
R010C002	FF	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	F-
R015C002	FF	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	F-
R020C002	FF	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	F-
R050C002	FF	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	F-
R100C002	F?	nc	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	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-	F-	F-	to	FT	FT	F-	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-	F-	F-	FT	FT	FT	F-	F-
r0010w0020	FT	nc	nc	FT	FT	F-	F-	F-	FT	FT	FT	F-	F-
r0010w0050	FT	nc	nc	FT	FT	F-	F-	F-	FT	FT	FT	F-	F-
r0010w0100	FT	nc	nc	FT	FT	F-	F-	F-	FT	FT	FT	F-	F-
r0010w0500	FT	nc	nc	FT	FT	F-	F-	F-	FT	FT	FT	F-	F-
r0010w1000	FT	nc	nc	FT	FT	F-	F-	F-	FT	FT	FT	F-	F-
r0010w2000	FT	nc	nc	FT	FT	F-	F-	F-	FT	FT	to	F-	F-
r0020w0010	FT	nc	nc	FT	FT	F-	F-	F-	FT	FT	FT	F-	F-
r0100w0010	FT	nc	nc	FT	FT	F-	F-	F-	FT	FT	cc	F-	F-
r0500w0010	FT	nc	nc	FT	FT	F-	F-	F-	FT	FT	cc	F-	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	nc
000010	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
000020	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
000050	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
000100	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
000200	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
000500	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
001000	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
002000	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
005000	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
010000	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
020000	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
050000	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
100000	nc	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	FT	F-
000010	FT	FT	nc	FT	FT	F-	FT	FT	FT	F-
000020	FT	mp	nc	F-	F-	to	to	FT	FT	F-
000050	FT	mp	nc	F-	F-	to	to	to	to	F-
000100	FT	mp	nc	F-	F-	to	to	to	to	F-
000200	FT	cc	nc	F-	F-	F-	F-	to	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	nc
05	nc	nc	F	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	F	nc	nc	nc	nc	nc	nc	nc
15	nc	nc	mp	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	mp	nc	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	FT	F-
05	FT	nc	nc	FT	FT	F-	FT	FT	FT	F-
10	to	nc	nc	FT	FT	F-	FT	FT	FT	F-
15	to	nc	nc	to	to	to	to	to	to	F-
20	to	nc	nc	to	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	nc
010	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
020	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
050	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
100	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
200	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
500	nc	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	FT	F-
010	FT	to	nc	FT	FT	F-	FT	FT	FT	F-
020	nc	mp	nc	to	to	to	to	to	to	F-
050	nc	cc	nc	to	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	FF	FT	F-			
005	nc	FF	FF	FF	FF	FF	FT	F-			
010	nc	FF	FF	FF	FF	FF	FT	F-			
020	nc	FF	FF	FF	FF	FF	FT	F-			
050	nc	FF	FF	FF	FF	FF	cc	F-			
100	nc	FF	FF	FF	FF	FF	cc	F-			
200	nc	FF	FF	FF	FF	FF	cc	F-			
500	nc	FF	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	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	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
18	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
22	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
28	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
32	nc	nc	nc	nc	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	FF	FF	FF	FT	F-	
06	nc	FF	FF	FF	FF	FF	FF	FF	FT	F-	
10	nc	FF	FF	FF	FF	FF	FF	FF	to	F-	
18	nc	FF	FF	FF	FF	FF	FF	FF	to	F-	
22	nc	FF	FF	FF	FF	FF	FF	FF	cc	F-	
28	nc	FF	FF	FF	FF	FF	FF	FF	cc	F-	
32	nc	FF	FF	FF	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-	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	0	0	0	0
instances	0	0	2	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	5	0	0	0	0	0	0	0	0	0	0

CSRepetitions (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	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)											
	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	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)											
	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
DrinkVendingMachine (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	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)											
	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	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)											
	Cunf	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pess	Marcie Sara
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)											
	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	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)											
	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	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
GlobalResAlloc (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	0
best	0	0	2	0	0	0	0	0	0	0
subtotal	0	0	6	0	0	0	0	0	0	0
GlobalResAlloc (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	1
instances	1	1	0	1	1	1	1	2	1	2
max reached	0	0	0	0	0	0	0	2	0	2
best	0	0	0	0	0	0	0	2	0	2
subtotal	2	2	0	2	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	1
instances	0	7	0	8	8	8	8	8	5	8
max reached	0	0	0	2	2	2	2	2	0	2
best	0	0	0	2	2	2	2	2	0	2
subtotal	0	8	0	13	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	0
instances	0	0	4	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0	0	0
subtotal	0	0	7	0	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	1
instances	3	0	0	6	6	3	3	4	3	7
max reached	0	0	0	0	0	0	0	0	0	2
best	0	0	0	0	0	0	0	0	0	2
subtotal	4	0	0	7	7	4	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	1
instances	0	3	0	6	6	6	6	3	4	6
max reached	0	0	0	2	2	2	2	0	0	2
best	0	0	0	2	2	2	2	0	0	2
subtotal	0	4	0	11	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	0
instances	0	0	3	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0	0	0
subtotal	0	0	6	0	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	1
instances	2	0	0	7	7	7	7	7	2	7
max reached	0	0	0	2	2	2	2	2	0	2
best	0	0	0	2	2	2	2	2	0	2
subtotal	3	0	0	12	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	0
instances	0	0	1	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0	0	0
subtotal	0	0	4	0	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	1	1	1	1
instances	1	6	0	6	6	6	6	6	6	6	1	6	6
max reached	0	2	0	2	2	2	2	2	2	2	0	2	2
best	0	2	0	2	2	2	2	2	2	2	0	2	2
subtotal	2	11	0	11	11	11	11	11	11	11	2	11	11
Peterson (Colored)													
1st instance	0	0	1	0	0	0	0	0	0	0	0	0	0
instances	0	0	2	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	5	0	0	0	0	0	0	0	0	0	0
Peterson (P/T)													
1st instance	1	0	0	1	1	1	1	1	1	1	1	1	1
instances	2	0	0	6	6	3	3	3	4	4	2	6	6
max reached	0	0	0	2	2	0	0	0	2	2	0	2	2
best	0	0	0	2	2	0	0	0	2	2	0	2	2
subtotal	3	0	0	11	11	4	4	4	9	9	3	11	11
Philosophers (Colored)													
1st instance	0	0	0	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0
Philosophers (P/T)													
1st instance	1	1	0	1	1	1	1	1	1	1	1	1	1
instances	9	4	0	11	11	11	11	11	6	6	8	11	11
max reached	0	0	0	2	2	2	2	2	0	0	0	2	2
best	0	0	0	2	2	2	2	2	0	0	0	2	2
subtotal	10	5	0	16	16	16	16	16	7	7	9	16	16
PhilosophersDyn (Colored)													
1st instance	0	0	0	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0
PhilosophersDyn (P/T)													
1st instance	0	1	0	1	1	1	1	1	1	1	1	1	1
instances	0	1	0	3	3	3	3	3	3	3	1	3	3
max reached	0	0	0	2	2	2	2	2	2	2	0	2	2
best	0	0	0	2	2	2	2	2	2	2	0	2	2
subtotal	0	2	0	8	8	8	8	8	8	8	2	8	8
Planning (P/T)													
1st instance	0	0	0	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad (P/T)													
1st instance	1	0	0	1	1	1	1	1	1	1	1	1	1
instances	2	0	0	3	3	2	2	2	2	2	2	5	5
max reached	0	0	0	0	0	0	0	0	0	0	0	2	2

best	0	0	0	0	0	0	0	0	0	2		
subtotal	3	0	0	4	4	3	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	1	1	1
instances	15	0	0	15	15	15	15	15	15	15	15	15
max reached	2	0	0	2	2	2	2	2	2	2	2	2
best	2	0	0	2	2	2	2	2	2	2	2	2
subtotal	20	0	0	20	20	20	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	1	0	0	1	1	1
instances	0	0	0	1	1	1	1	0	0	1	1	1
max reached	0	0	0	2	2	2	2	0	0	2	2	2
best	0	0	0	2	2	2	2	0	0	2	2	2
subtotal	0	0	0	6	6	6	6	0	0	6	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	1	1	1
instances	12	0	0	12	12	12	12	12	12	7	12	12
max reached	2	0	0	2	2	2	2	2	2	0	2	2
best	2	0	0	2	2	2	2	2	2	0	2	2
subtotal	17	0	0	17	17	17	17	17	17	8	17	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	0	0	0
instances	0	0	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	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	1	1	1
instances	6	2	0	6	6	3	3	3	3	3	6	6
max reached	2	0	0	2	2	2	2	2	2	0	2	2
best	2	0	0	2	2	2	2	2	2	0	2	2
subtotal	11	3	0	11	11	8	8	8	8	4	11	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	0	0	0
instances	0	0	3	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0	0	0
best	0	0	2	0	0	0	0	0	0	0	0	0
subtotal	0	0	6	0	0	0	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	1	1	1
instances	2	0	0	3	3	3	3	3	3	3	5	5
max reached	0	0	0	0	0	0	0	0	0	0	2	2
best	0	0	0	0	0	0	0	0	0	0	2	2
subtotal	3	0	0	4	4	4	4	4	4	4	10	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	0	0	0
instances	0	0	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	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										
Total Score	Cunf	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Marcie Sara
	0	37	37			37		31	20	37
HouseConstruction (P/T)										
Total Score	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)										
Total Score	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)										
Total Score	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)										
Total Score	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)										
Total Score	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

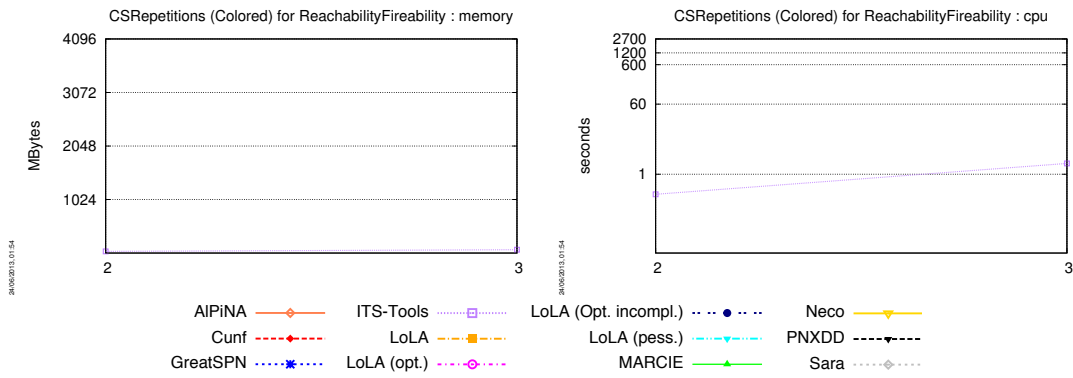
1	1	1
		
Sara 325 points	LoLA 290 points	LoLa opt 290 points

9 The ReachabilityFireability Examination

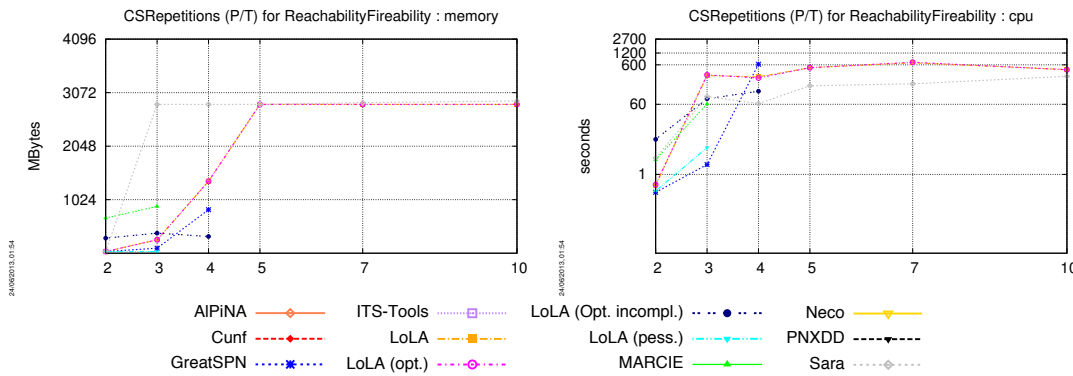
This examination deals with reachability properties dealing with transition fireability only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

9.1 Handling of Models by Tools

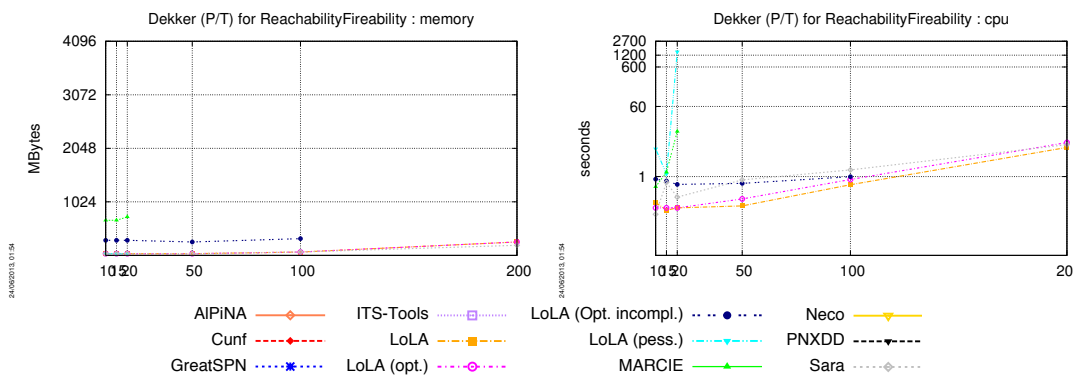
CSRepetitions (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



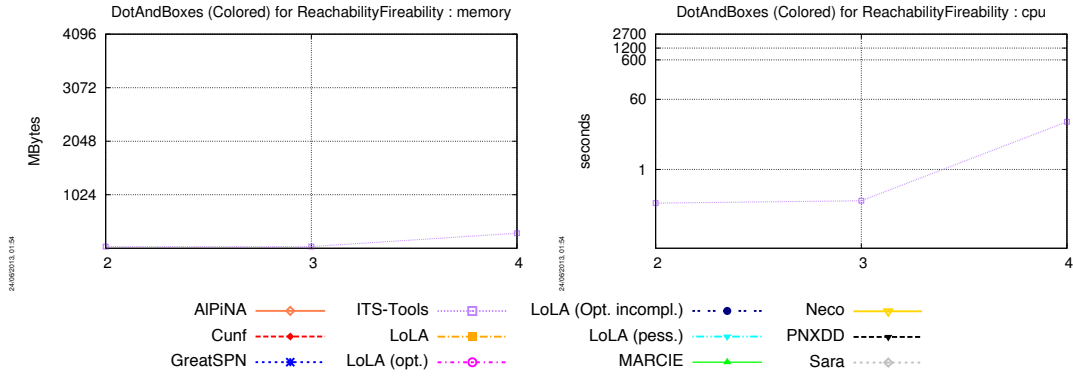
CSRepetitions (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



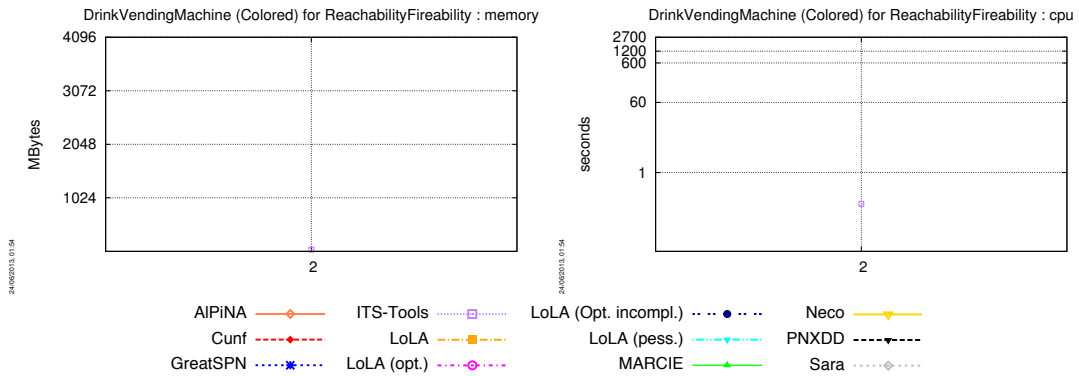
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



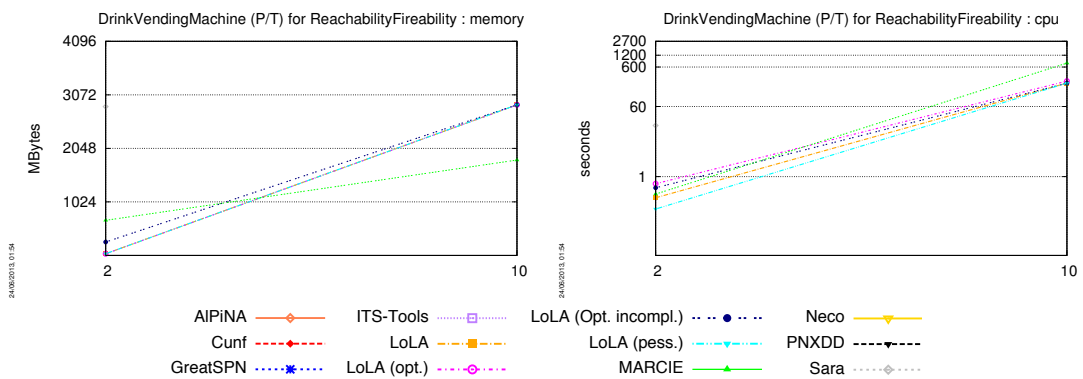
DotAndBoxes (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



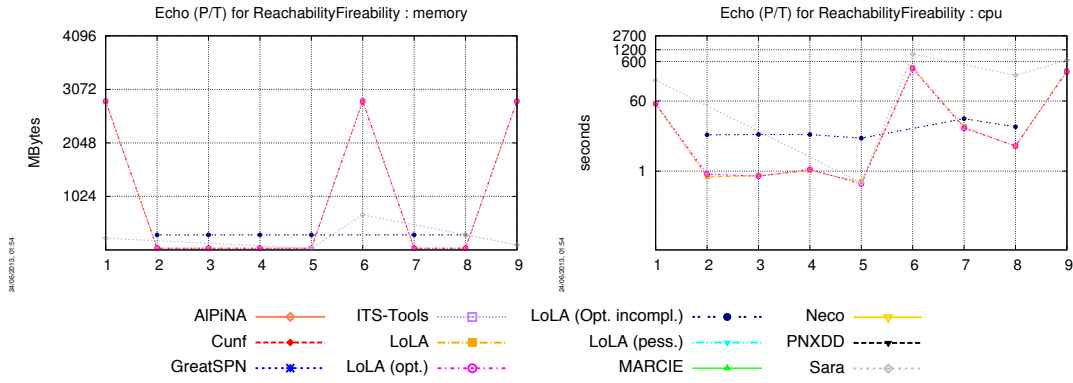
DrinkVendingMachine (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



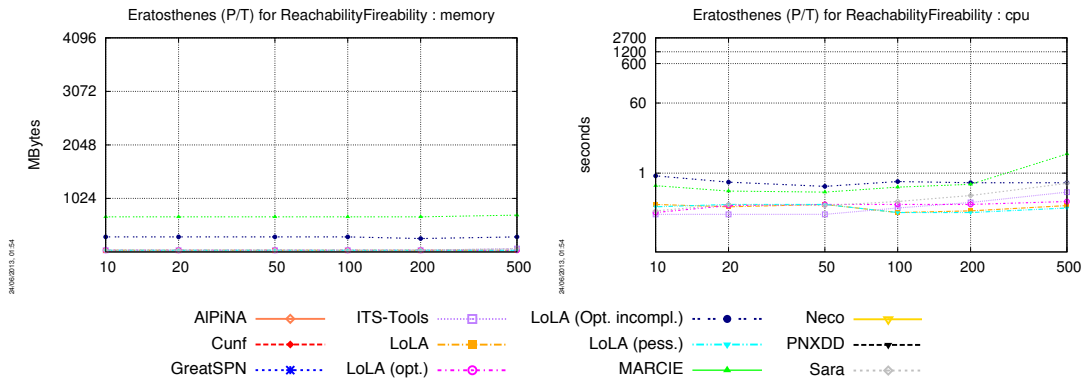
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



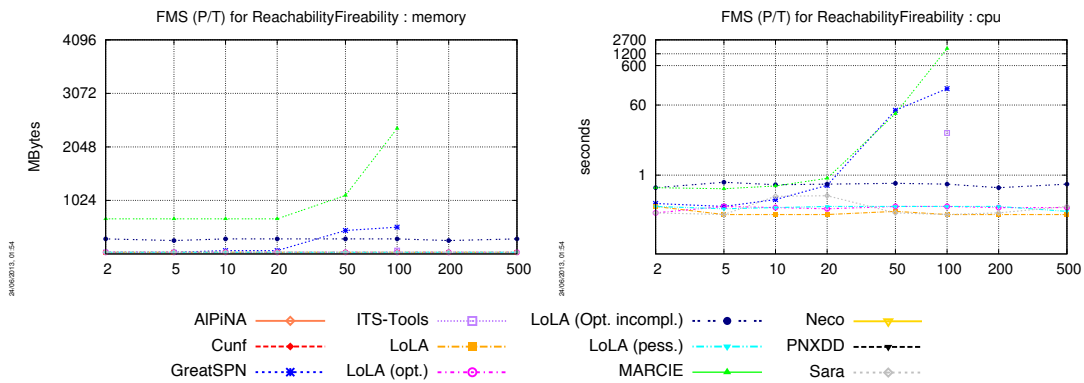
Echo (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



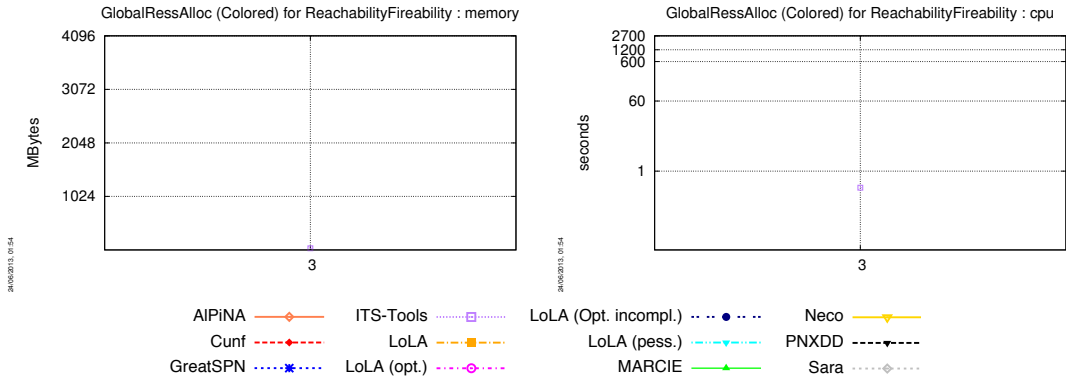
Eratosthenes (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



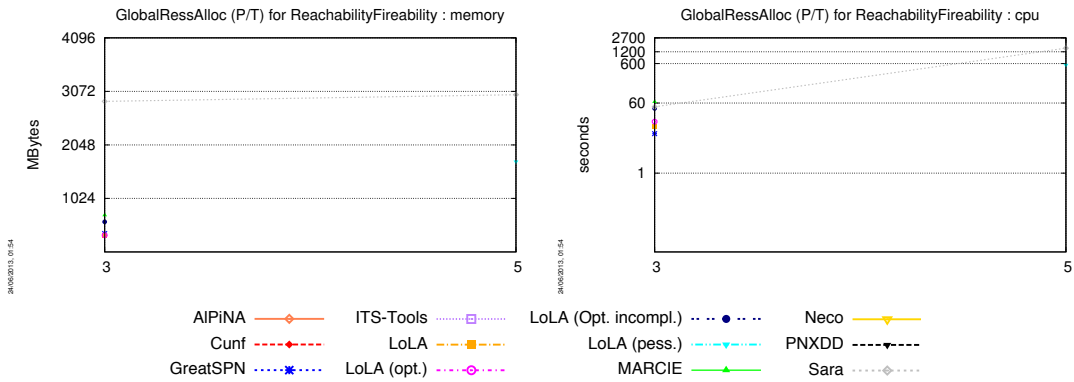
FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



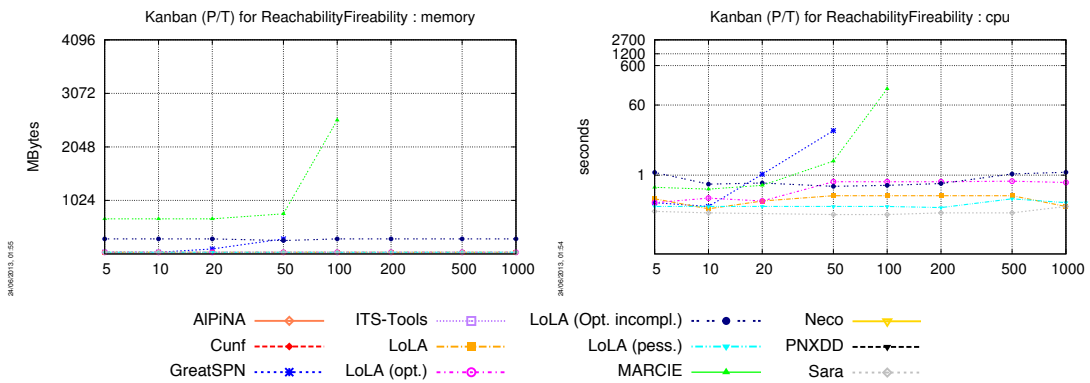
GlobalResAlloc (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



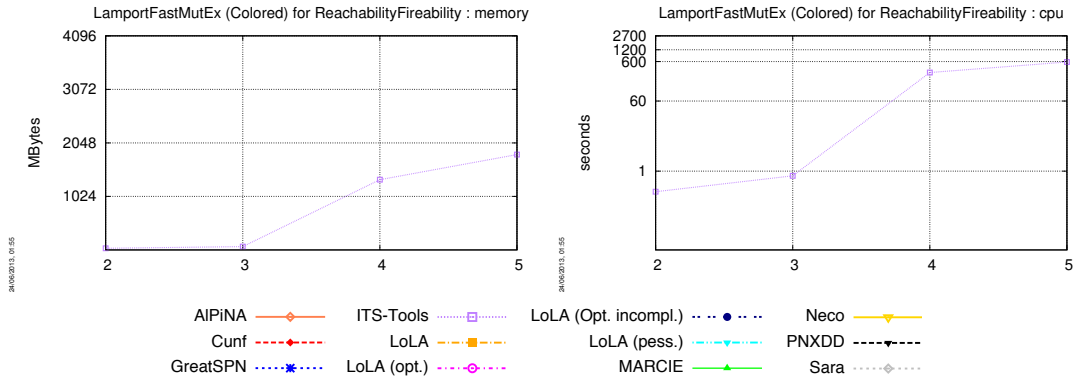
GlobalResAlloc (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



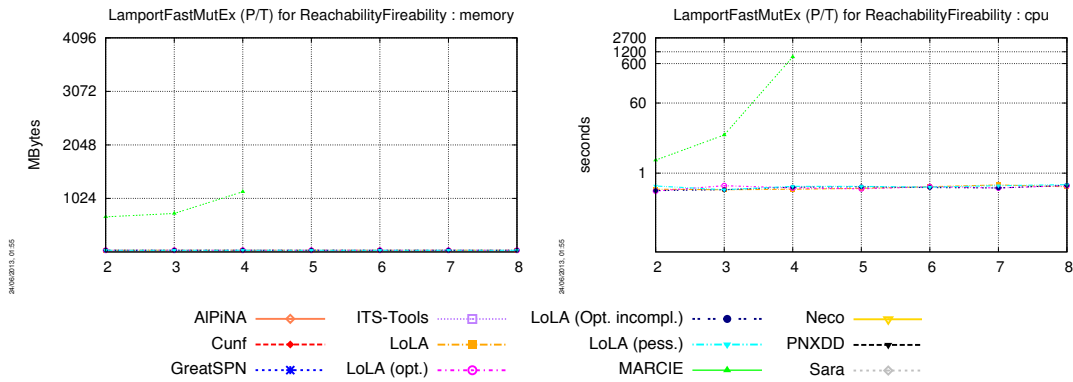
Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



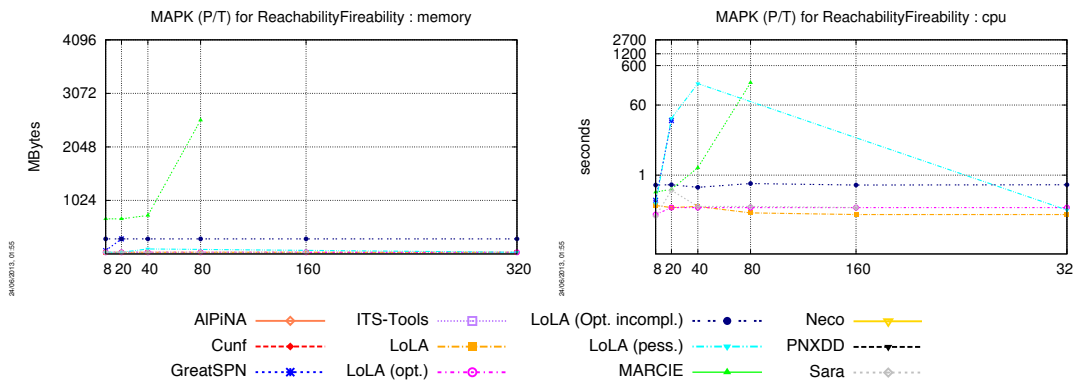
LamportFastMutEx (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



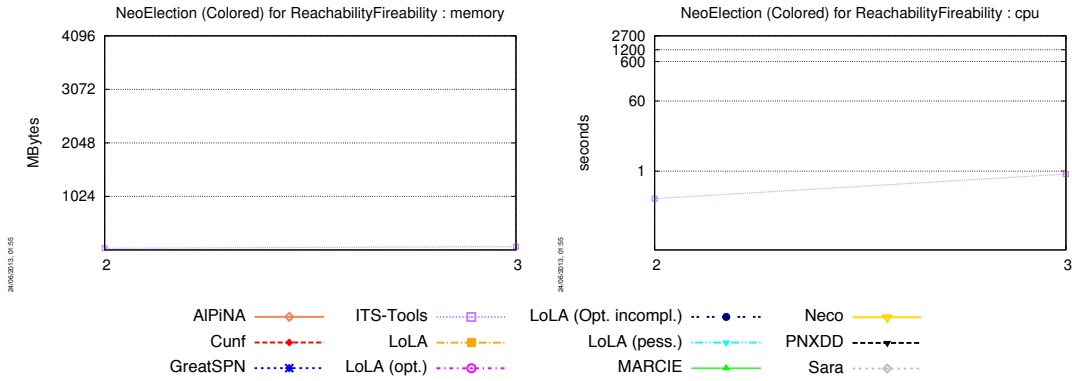
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



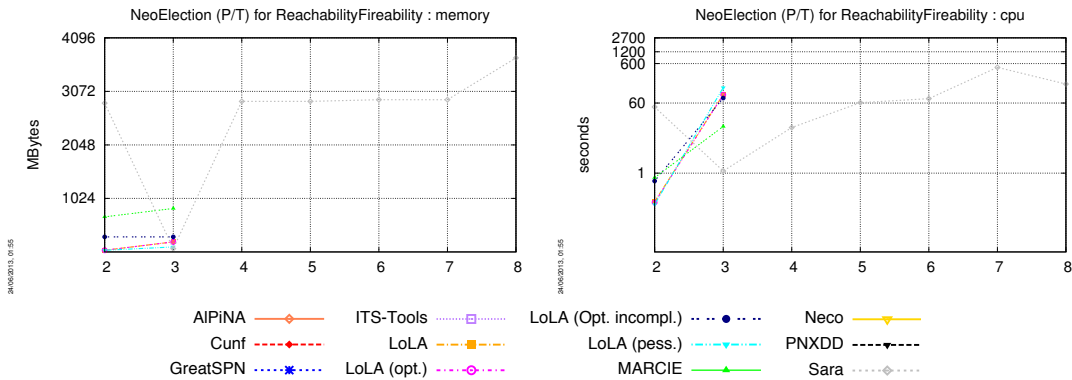
MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



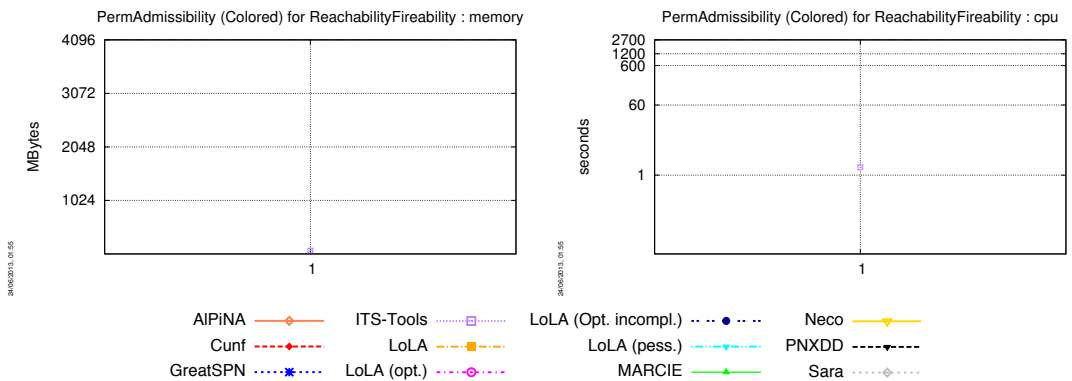
NeoElection (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



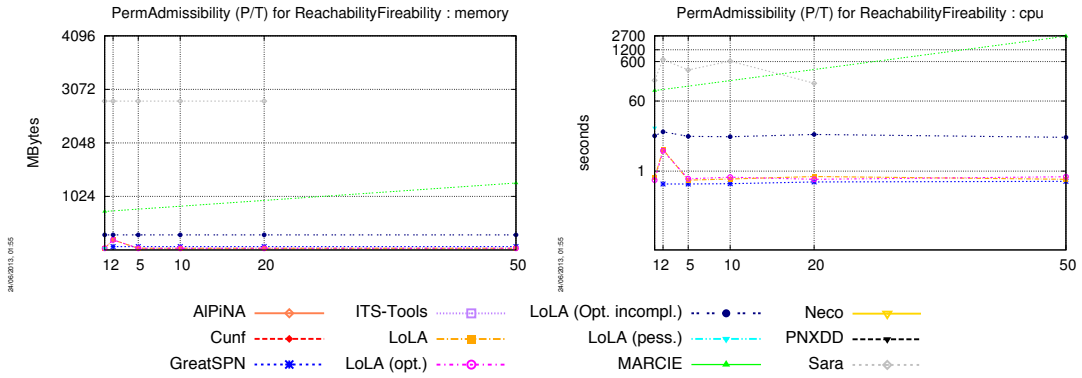
NeoElection (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



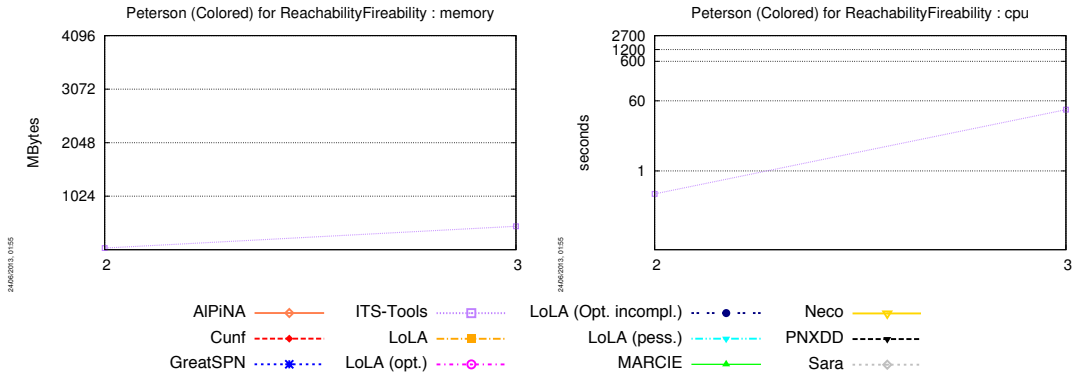
PermAdmissibility (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



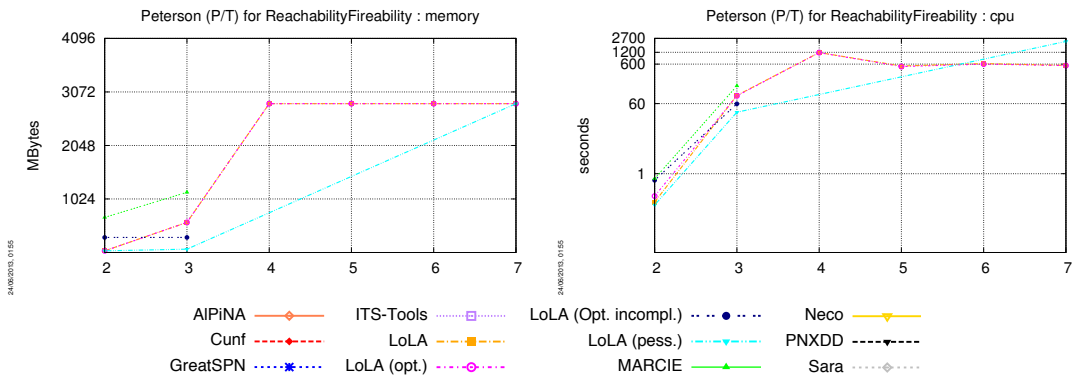
PermAdmissibility (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

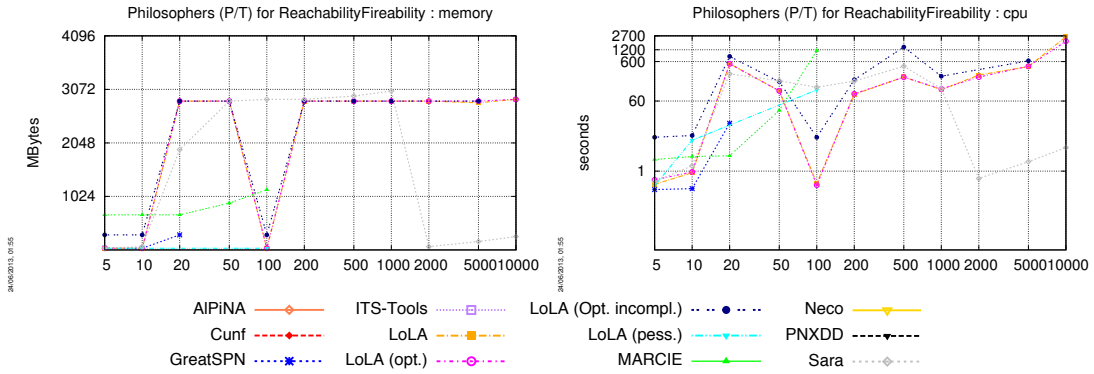


Peterson (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



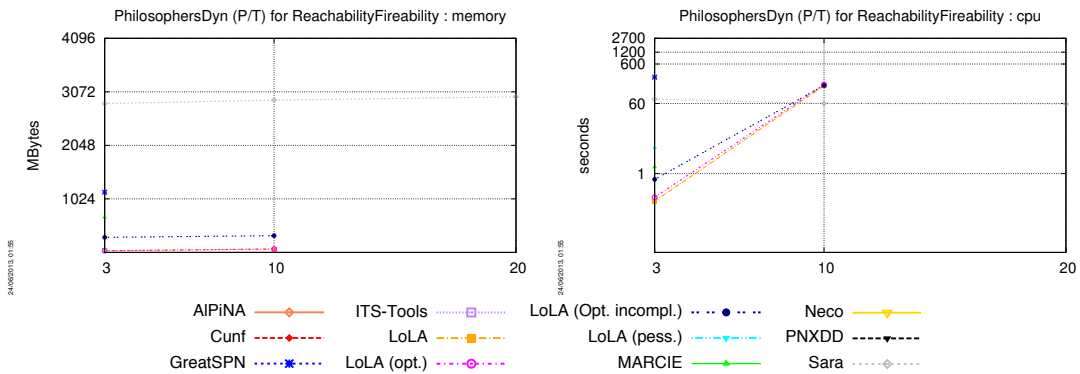
Philosophers (colored) No instance of this model could be computed for the **ReachabilityFireability** examination.

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



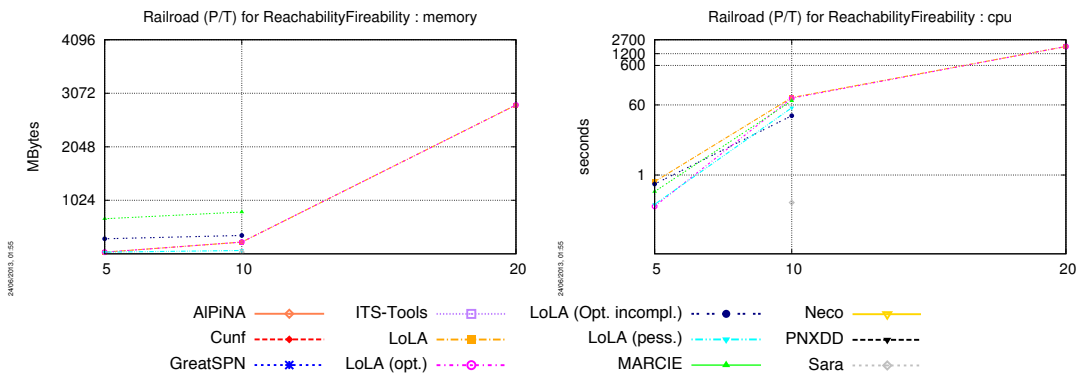
PhilosophersDyn (colored) No instance of this model could be computed for the **ReachabilityFireability** examination.

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

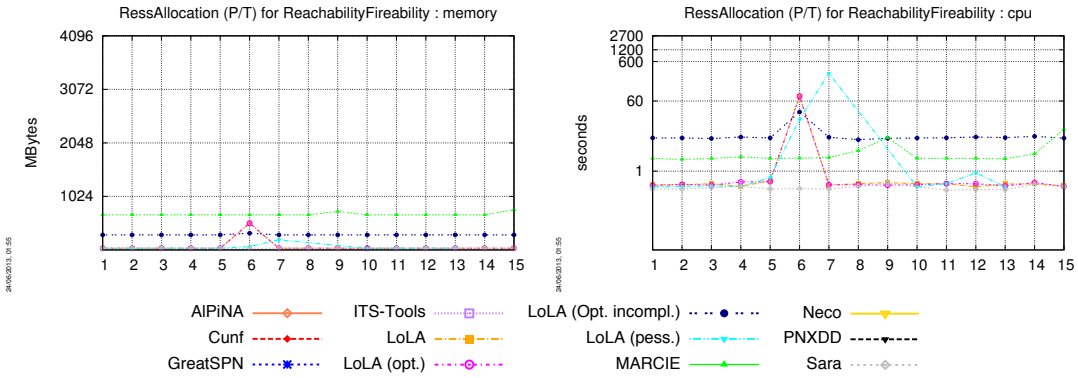


Planning (P/T) No instance of this model could be computed for the **ReachabilityFireability** examination.

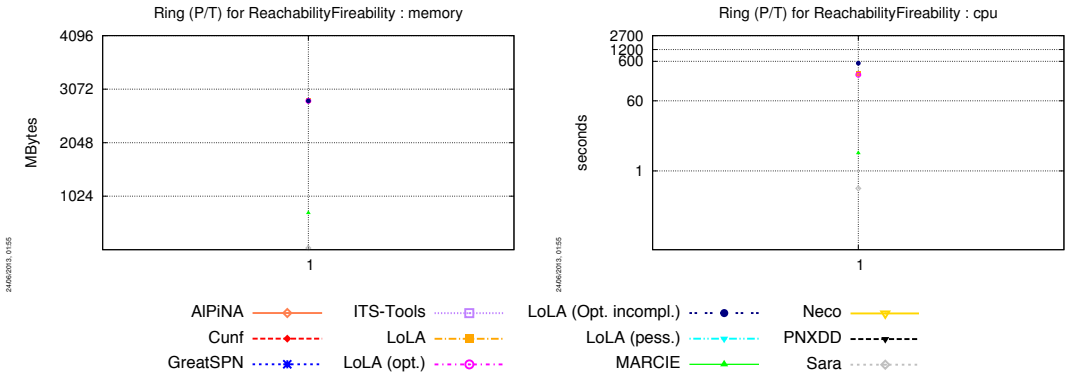
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



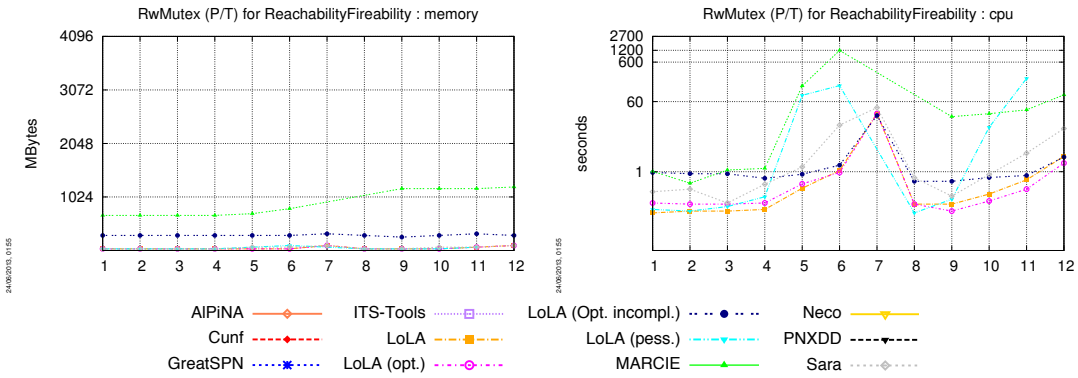
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

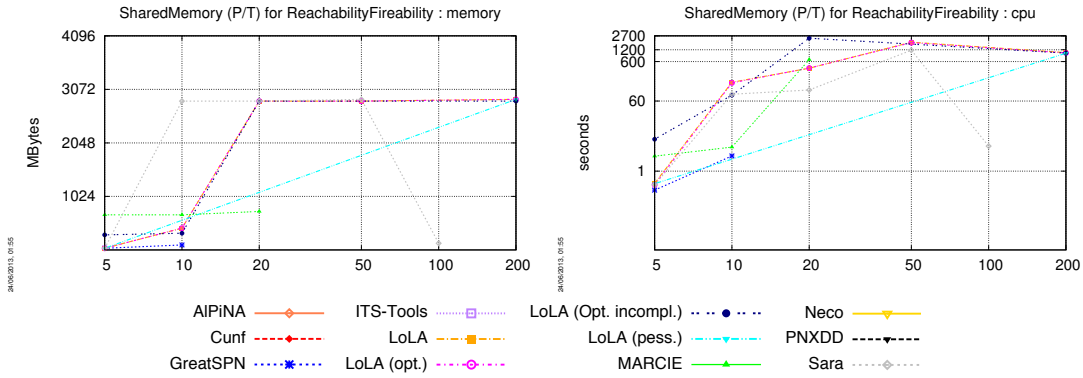


RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

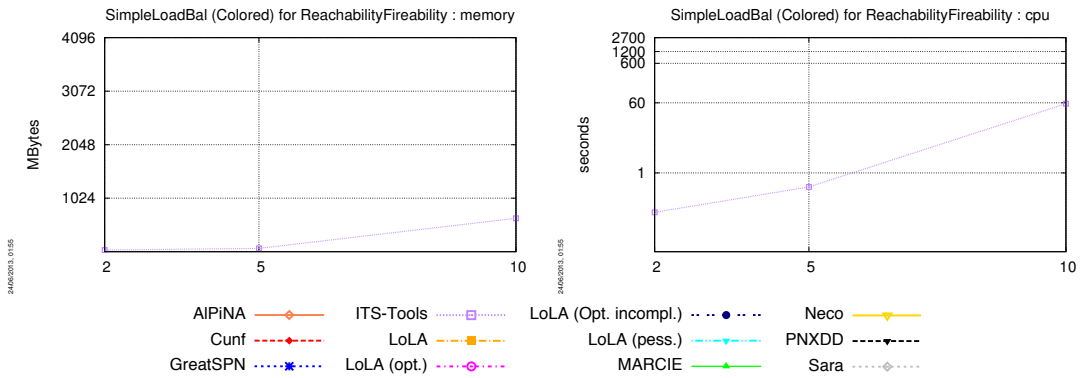


SharedMemory (colored) No instance of this model could be computed for the **ReachabilityFireability** examination.

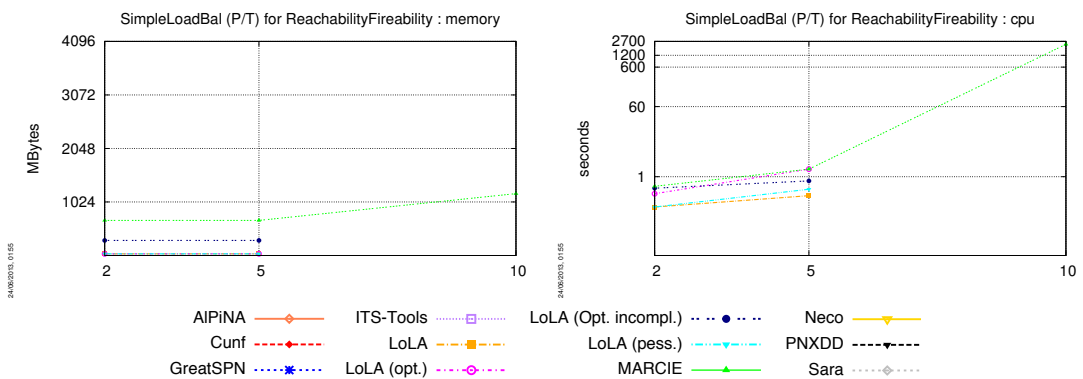
SharedMemory (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

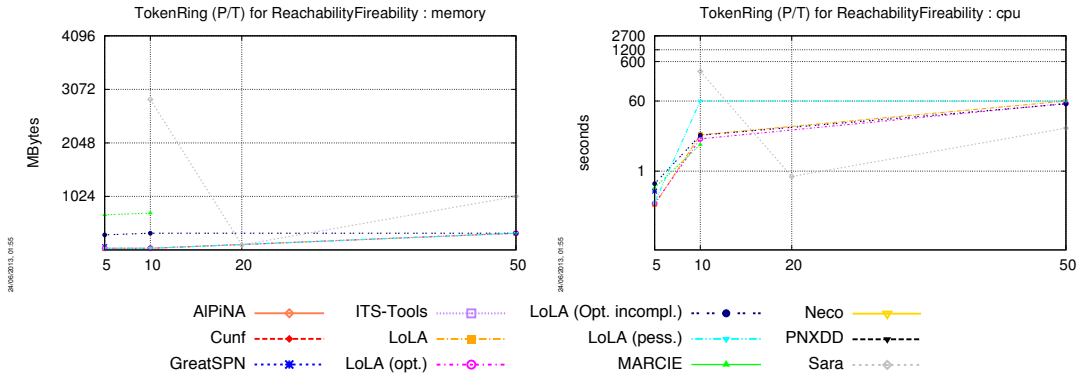


SimpleLoadBal (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

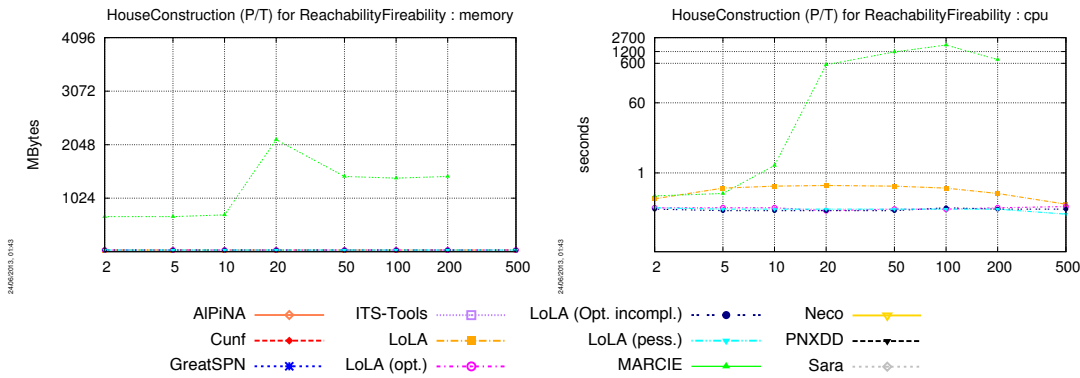


TokenRing (colored) No instance of this model could be computed for the **ReachabilityFireability** examination.

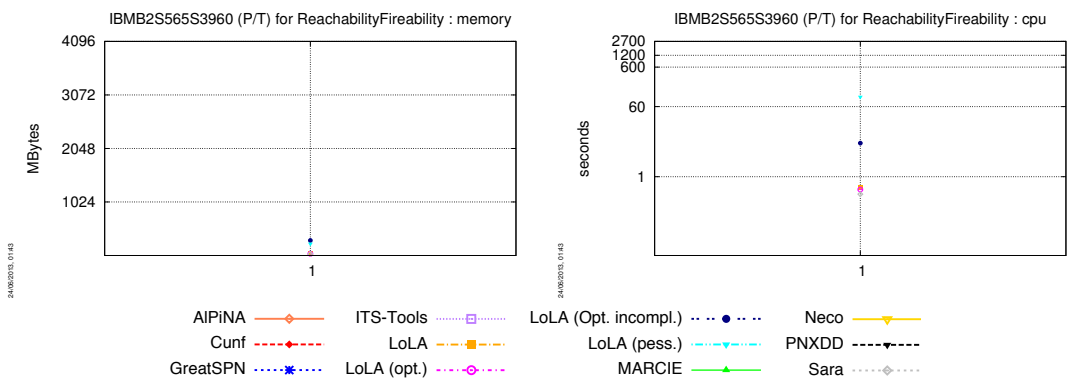
TokenRing (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

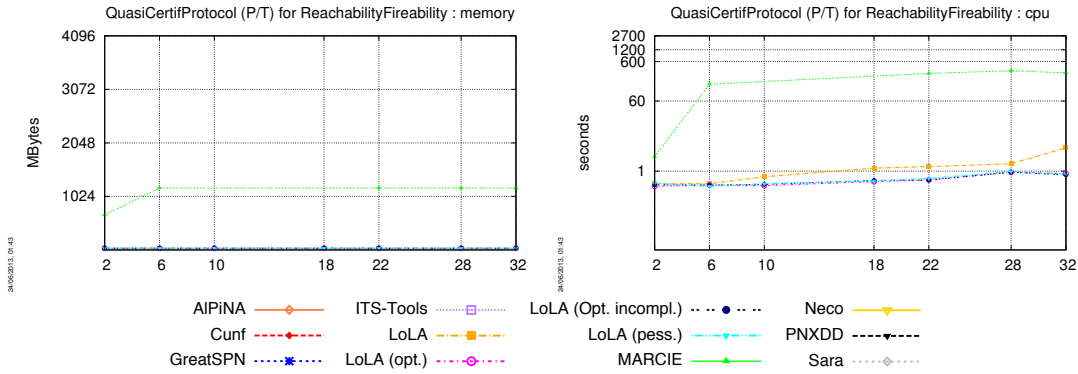


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

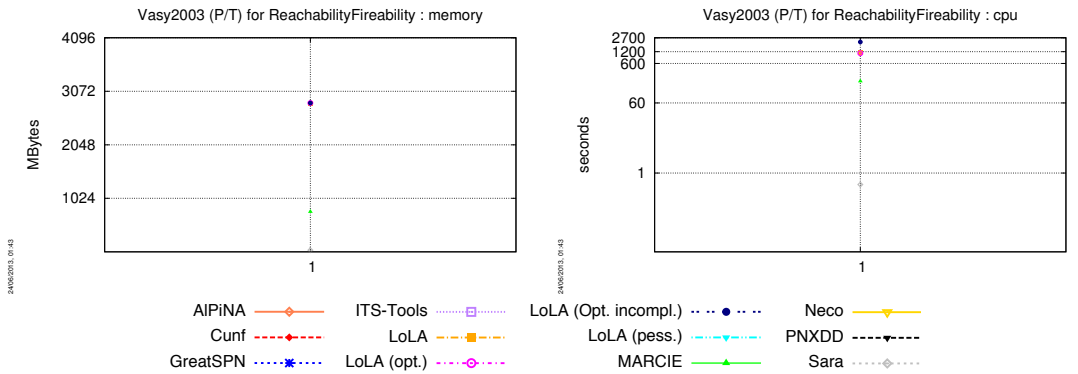


QuasiCertifProtocol (colored) No instance of this model could be computed for the **Reachability-Fireability** examination.

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 “Surprise” 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.

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

CSRepetitions (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara	
02	FFFFFFF	nc	FFFFFFF	FFFFFFF	FFFFFF-F	cc	FFFFFFF	FFFFFFF		
03	FFFFFFF	nc	TFTFFF	TFTFFF	-F-FFF-F	TFTFFF-F	FFFFFFF	TFTFF--		
04	FFFFFFF	nc	FFFFFFF	FFFFFFF	FFFFFF-F	to	to	FFFF--		
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	FFFF--		
10	mp	nc	FFFF-F	FFFF-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	TFTFFF	TFTFFF	-F-FFFF	TFTFFF	FFFFFFF	cc		
015	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	cc		
020	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	cc		
050	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	to	cc		
100	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	to	cc		
200	nc	nc	FFFFFFF	FFFFFFF	nc	to	to	cc		
DotAndBoxes (colored)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara	
2	nc	FFFFFFT	nc	nc	nc	nc	nc	nc	nc	
3	nc	FFFFF	nc	nc	nc	nc	nc	nc	nc	
4	nc	F	nc	nc	nc	nc	nc	nc	nc	
5	nc	mp	nc	nc	nc	nc	nc	nc	nc	
DrinkVendingMachine (colored)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara	
02	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc	
10	nc	cc	nc	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	FTFTTF	FTFTTF	FF-FF-F	FF-FF-F	FTFTTF	TFF--T		
10	nc	nc	cc	cc	cc	cc	FFFFFFF	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	FFFFFFF		
d02r11	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	to	to		
d02r15	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	to	to		
d02r19	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	to	to		
d03r03	nc	nc	TFTTTF	TFTTTF	-F-F-FF	to	to	TFTTTF		
d03r05	nc	nc	-F-FFFF	-F-FFFF	to	to	to	FFFFFFF		
d03r07	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	to	to		
d04r03	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	to	FFFFFFF		
d05r03	nc	nc	-F-F-F-F	-F-F-F-F	to	to	to	TFTTTF		
Eratosthenes (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara	
010	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FTTFTTT	
020	nc	FFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	
050	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFTTT	
100	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFTTT	
200	nc	FFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFTTT	
500	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFTTT	
FMS (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara	
002	FFFFFFF	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	
005	FFFFFFF	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFF-FFF	FFFFFFF	FFFFFFF	FFFFFFF	
010	FFFFFFF	nc	FFFFFFF	FFFFFFF	FFFFFFF	-F-FF--	FFFFFFF	FFFFFFF	FFFFFFF	
020	FFFFFFF	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	
050	FFFFFFF	nc	FFFFFFF	FFFFFFF	FFFFFFF	-F-FFF-F	FFFFFFF	FFFFFFF	FFFFFFF	
100	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	---FFF	FFFFFFF	FFFFFFF	FFFFFFF	
200	to	nc	FFFFFFF	FFFFFFF	FFFFFFF	---FTF	to	FFFFFFF	FFFFFFF	
500	to	nc	FFFFFFF	FFFFFFF	FFFFFFF	TFTFFF	to	FFFFFFF	FFFFFFF	
GlobalResAlloc (colored)										

Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
03	nc	FFFF	nc	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
GlobalResAlloc (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
03	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF-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 LoLa	inc LoLa	pess	Marcie	Sara
0005	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FFFF	FFFFFFFF	FFFFFFFF		
0010	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	cc	FFFFFFFF	FFFFFFFF		
0020	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFF--	FFFFFFFF	to		
0050	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFF--	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-FFFF	to	FFFFFFFF		
1000	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-FF--	to	FFFFFFFF		
LamportFastMutex (colored)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
2	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
4	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
5	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
8	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
LamportFastMutex (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
2	nc	nc	cc	cc	cc	cc	cc	FFFFFFFF	cc	
3	nc	nc	cc	cc	cc	cc	cc	FFFFFFFF	cc	
4	nc	nc	cc	cc	cc	cc	cc	FFFFFFFF	cc	
5	nc	nc	cc	cc	cc	cc	cc	to	cc	
6	nc	nc	cc	cc	cc	cc	cc	to	cc	
7	nc	nc	cc	cc	cc	cc	cc	to	cc	
8	nc	nc	cc	cc	cc	cc	cc	to	cc	
MAPK (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
008	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF
020	FFFFFFFF	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	-F-F-FFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF
040	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF	FFFFFFFF
080	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	to	FFFFFFFF	FFFFFFFF	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 LoLa	inc LoLa	pess	Marcie	Sara
2	nc	FFFFTTT	nc	nc	nc	nc	nc	nc	nc	nc
3	nc	FFFFTTF	nc	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
8	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
NeoElection (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
2	nc	nc	TFTTTTT	TFTTTTT	-F-F--	TFTTTTT	FFFFTTT	TTTT--T		

3	nc	nc	TFFTTF	TFFTTF	-F-FF-F	cc	FFFFFFF	TTTTTTT	
4	nc	nc	to	to	to	to	to	-T-T-FFT	
5	nc	nc	to	to	to	to	to	TTTT--	
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	FFFFFFFT	nc	nc	nc	nc	nc	nc	nc
02	nc	mp	nc	nc	nc	nc	nc	nc	nc
05	nc	mp	nc	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	nc	nc	nc	nc	nc
50	nc	mp	nc	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	TFFTTF	TFFTTF	-F-FFF-F	TFFTTF	FFFFFFT	TT--FFF	
02	FFFFFFTT	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	to	FFF--	
05	FFFFFFTT	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	to	FFF--	
10	FFFFFFTT	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	to	FFF--	
20	FTTTT	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	to	FF-F--	
50	FFFFFFTT	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	cc	to	
Peterson (colored)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
2	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
4	nc	mp	nc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	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	FFFFFFTT	FFFFFFTT	FFFF--	---TTT	FFFFFFF	to	
3	nc	nc	FFFFFFTF	FFFFFFTF	FFFF--F	FFFFT--	FFFFFFF	to	
4	nc	nc	FF-F--	FF-F--	to	to	to	to	
5	nc	nc	FFFF--	FFFF--	to	to	to	to	
6	nc	nc	FFFF--	FFFF--	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	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	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
000005	FTFTFFF	nf	FTFTFTF	FTFTFTF	FF-FFF-F	FTFTFTF	FFFFFFF	TTTTFFF	
000010	FTFTFFF	nf	FFFFFFTF	FFFFFFTF	FFFF--F	FFFFFFTF	FFFFFFF	TFTF-FFF	
000020	FTFTFFF	nf	FFFF-F-F	FFFF-F-F	FFFF-F-F	to	FFFFFFF	TFTF--	
000050	mp	nf	FF-FFFF	FF-FFFF	FF-FFFF	to	FFFFFFF	TF--	
000100	mp	nf	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	-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	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	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt inc	LoLa	pess	Marcie Sara
03	FFFFFFTFT	nc	TFTFFFTF	TFTFFFTF	-F-FFF-F	TFTFFFTF	FFFFFFTFT	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	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	FFFFFFF	to	
010	nc	nc	TFTFFFTF	TFTFFFTF	-F-FFF-F	--F--	FFFFFFFT	TTTTFFF	
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	
ResAllocation (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	FFFFFFTFT	TFTFFFTF	
R003C002	nc	nc	FFFFFFFT	FFFFFFFT	FFFFFF-F	--FTF	FFFFFFTFT	FFFFFFFT	
R003C003	nc	nc	TFTFFFTF	TFTFFFTF	-F-FFF-F	-F-FFFTF	FFFFFFTFT	TFTFFFTF	
R003C005	nc	nc	FFFFFFFT	FFFFFFFT	FFFFFF-F	FFFFFFFT	FFFFFFTFT	FFFFFFFT	
R003C010	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	-F-FFF-F	FFFFFFFT	TFTFFFFF	
R003C015	nc	nc	FFFFFFFT	FFFFFFFT	FFFFFF-F	-F-FFF-F	FFFFFFTFT	FFFFFFFT	
R003C020	nc	nc	FFFFFFFT	FFFFFFFT	FFFFFF-F	FFFFFFFT	FFFFFFFT	FFFFFFFT	
R003C050	nc	nc	FFFFFFFT	FFFFFFFT	FFFFFF-F	to	FFFFFFFT	FFFFFFFT	
R003C100	nc	nc	FFFFFFFT	FFFFFFFT	FFFFFF-F	to	FFFFFFFT	FFFFFFFT	
R005C002	nc	nc	TFTTFFF	TFTTFFF	-F-F-FFF	TFTF-FTF	FFFFFFFT	to	
R010C002	nc	nc	FFFFFFFT	FFFFFFFT	FFFFFF-F	TFTFFFFF	FFFFFFFT	TTTTFFF	
R015C002	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTFFFFF	FFFFFFFT	TFTFFFFF	
R020C002	nc	nc	FFFFFFFT	FFFFFFFT	FFFFFF-F	FFFFFFFT	FFFFFFFT	FFFFFFFT	
R050C002	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	to	FFFFFFFT	TFTFFFFF	
R100C002	nc	nc	FFFFFFFT	FFFFFFFT	FFFFFF-F	to	FFFFFFFT	FFFFFFFT	
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	FFFFFFFT	TFTTFFF	
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	FFFFFFFT	TFTFFFFF	
r0010w0020	nc	nc	TFTFFFFF	TFTFFFFF	-F-FFFFF	TFTFFFFF	FFFFFFFT	TFTFFFFF	
r0010w0050	nc	nc	TFTTFFF	TFTTFFF	-F-F-FFF	TFTTFFF	FFFFFFFT	TFTTFFF	
r0010w0100	nc	nc	TFTTFFF	TFTTFFF	-F-F-FFF	cc	FFFFFFFT	TFTTFFF	
r0010w0500	nc	nc	TFTFFFTF	TFTFFFTF	-F-FFF-F	TFTFFFTF	FFFFFFTFT	TFTFFFTF	
r0010w1000	nc	nc	FFFFFFFT	FFFFFFFT	FFFFFF-F	FFFFFFFT	FFFFFFTFT	FFFFFFFT	
r0010w2000	nc	nc	TFTTFTF	TFTTFTF	-F-F-F-F	to	to	TTTTFFF	
r0020w0010	nc	nc	TFTTFTF	TFTTFTF	-F-F-F-F	-F-F-FTF	to	TTTTFFF	
r0100w0010	nc	nc	FFFFFFFT	FFFFFFFT	FFFFFF-F	--F-F	cc	FFFFFFFT	
r0500w0010	nc	nc	FFFFFFFT	FFFFFFFT	FFFFFF-F	FFFFF--	cc	FFFFFFFT	

r1000w0010	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	---FFF	cc	FFFFFFF
r2000w0010	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	cc	FFFFFFF
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	FTFTFTF	nc	FFFFFTF	FFFFFTF	FFFF-F-F	---F-F	FFFFFFF	TFTTTTT
000010	TFTTTTT	nc	FTFTFTF	FTFTFTF	FF-F-F-F	to	FFFFFFT	TFFF--
000020	mp	nc	FFFFF-F	FFFFF-F	FFFFF-F	to	FFFFFFF	TFTFF--
000050	mp	nc	FFFFF-F	FFFFF-F	to	to	to	FFFF--
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	FFFFFFF	nc	nc	nc	nc	nc	nc
05	nc	FFFFFFF	nc	nc	nc	nc	nc	nc
10	nc	FFFFFFF	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	FFFFFTF	FFFFFTF	FFFFF-F	FFFFFTF	FFFFFFF	to
05	nc	nc	FFFFFTF	FFFFFTF	FFFFF-F	---FTF	FFFFFFF	to
10	nc	nc	to	to	to	to	FFFFFFF	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	FTFTFTF	nc	TFTTTTT	TFTTTTT	-F-F-F	-F-F--	FTFTFTF	to
010	to	nc	TFTTTTT	TFTTTTT	-F-F-F	-F---	FTFTFTF	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	cc	FFFFFFF	cc
005	cc	cc	cc	cc	cc	FFFFFFF	cc
010	cc	cc	cc	cc	cc	FFFFFFF	cc
020	cc	cc	cc	cc	cc	FFFFFFF	cc
050	cc	cc	cc	cc	cc	cc	cc
100	cc	cc	cc	cc	cc	cc	cc
200	cc	cc	cc	cc	cc	cc	cc
500	cc	cc	cc	cc	cc	to	cc
IBMB2S565S3960 (P/T)							
instances	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
none	FFFFFFF	FFFFFFF	FFFFFFF	-F-F--	to	cc	
QuasiCertifProtocol (colored)							
instances	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	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
02	cc	cc	cc	cc	cc	FFFFFFF	cc
06	cc	cc	cc	cc	cc	FFFFFFF	cc
10	cc	cc	cc	cc	cc	to	cc
18	cc	cc	cc	cc	cc	to	cc
22	cc	cc	cc	cc	cc	cc	cc
28	cc	cc	cc	cc	cc	cc	cc
32	cc	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	TFFFFTF	-TFFFF	

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	0	0
instances	0	2	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0	0
subtotal	0	5	0	0	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		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)										
	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		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)										
	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
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	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)										
	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pess	Marcie Sara
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)										
	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	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)										
	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pess	Marcie Sara
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
GlobalResAlloc (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	0
best	0	2	0	0	0	0	0	0	0
subtotal	0	4	0	0	0	0	0	0	0
GlobalResAlloc (P/T)									
	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pess	Marcie Sara
1st instance	1	0	1	1	1	1	0	1	1
instances	1	0	1	1	1	1	0	1	1
max reached	0	0	0	0	0	0	0	0	0
best	2	0	2	2	2	2	0	2	2
subtotal	4	0	4	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	1
instances	4	0	8	8	8	8	7	5	7
max reached	0	0	2	2	2	2	2	0	2
best	0	0	2	2	2	2	2	0	2
subtotal	5	0	13	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	0
instances	0	4	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0
subtotal	0	7	0	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	0	1	0
instances	0	0	0	0	0	0	0	3	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	2	0
subtotal	0	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	1
instances	2	0	6	6	6	6	4	4	5
max reached	0	0	2	2	2	2	2	0	0
best	0	0	2	2	2	2	2	0	0
subtotal	3	0	11	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	0
instances	0	2	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0
subtotal	0	5	0	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	1
instances	0	0	2	2	2	2	1	2	7
max reached	0	0	0	0	0	0	0	0	2
best	0	0	0	0	0	0	0	0	2
subtotal	0	0	3	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	0
instances	0	1	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0
subtotal	0	4	0	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	1	1	1	1
instances	5	0	6	6	6	6	6	1	1	5		
max reached	2	0	2	2	2	2	2	0	0	0		
best	2	0	2	2	2	2	2	0	0	0		
subtotal	10	0	11	11	11	11	11	2	2	6		
Peterson (Colored)												
1st instance	0	1	0	0	0	0	0	0	0	0	0	0
instances	0	2	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0	0	0	0
subtotal	0	5	0	0	0	0	0	0	0	0	0	0
Peterson (P/T)												
1st instance	0	0	1	1	1	1	1	1	1	1	0	0
instances	0	0	6	6	2	2	3	2	2	0	0	0
max reached	0	0	2	2	0	0	2	0	2	0	0	0
best	0	0	2	2	0	0	2	0	2	0	0	0
subtotal	0	0	11	11	3	3	8	3	3	0	0	0
Philosophers (Colored)												
1st instance	0	0	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0	0	0	0	0
Philosophers (P/T)												
1st instance	1	0	1	1	1	1	1	1	1	1	1	1
instances	3	0	11	11	9	9	3	5	7			
max reached	0	0	2	2	0	0	0	0	0	0	0	0
best	0	0	2	2	0	0	0	0	0	0	0	0
subtotal	4	0	16	16	10	10	4	6	8			
PhilosophersDyn (Colored)												
1st instance	0	0	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0	0	0	0	0
PhilosophersDyn (P/T)												
1st instance	1	0	1	1	1	1	1	1	1	1	1	1
instances	1	0	2	2	2	2	1	1	2			
max reached	0	0	0	0	0	0	0	0	0	0	0	0
best	0	0	2	2	2	2	0	0	2			
subtotal	2	0	5	5	5	5	2	2	5			
Planning (P/T)												
1st instance	0	0	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0	0	0	0	0
Railroad (P/T)												
1st instance	0	0	1	1	1	1	1	1	1	1	1	1
instances	0	0	3	3	2	2	2	2	2	1		
max reached	0	0	0	0	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

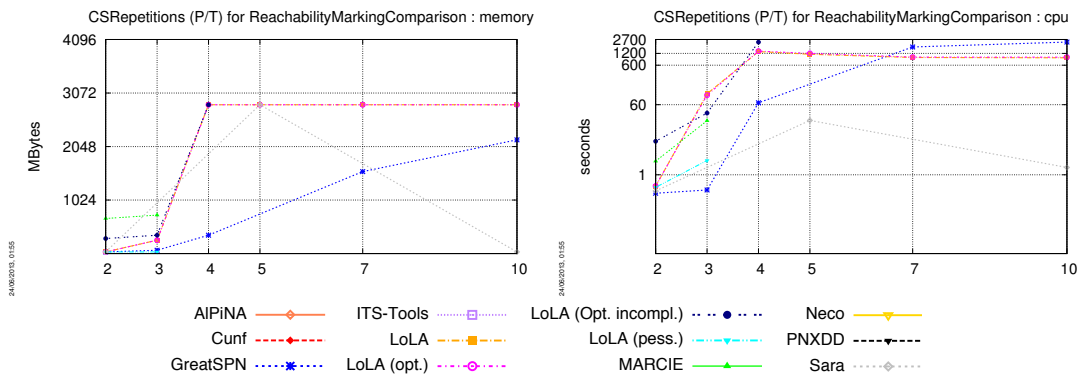
10 The ReachabilityMarkingComparison Examination

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).

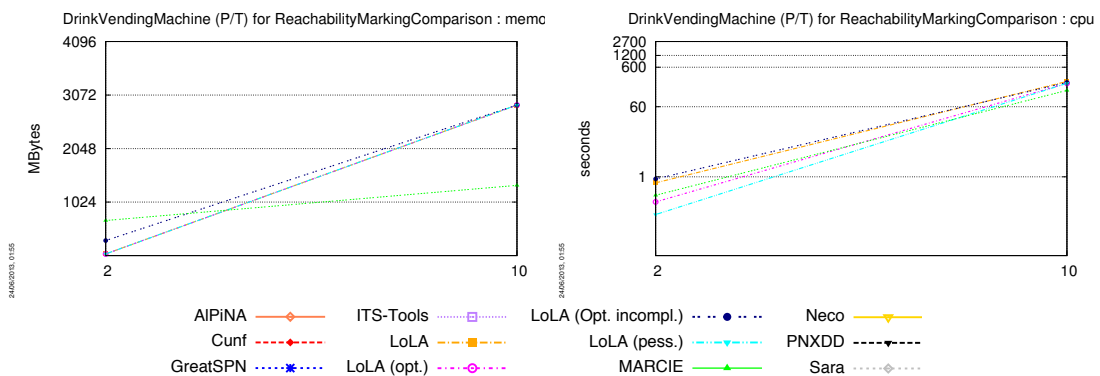


Dekker (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

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).



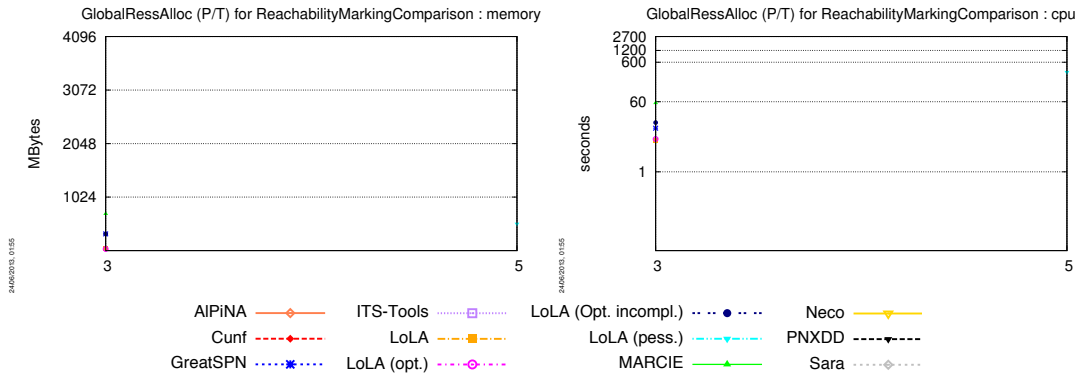
Echo (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

Eratosthenes (P/T) No instance of this model could be computed for the **ReachabilityMarking-Comparison** 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.

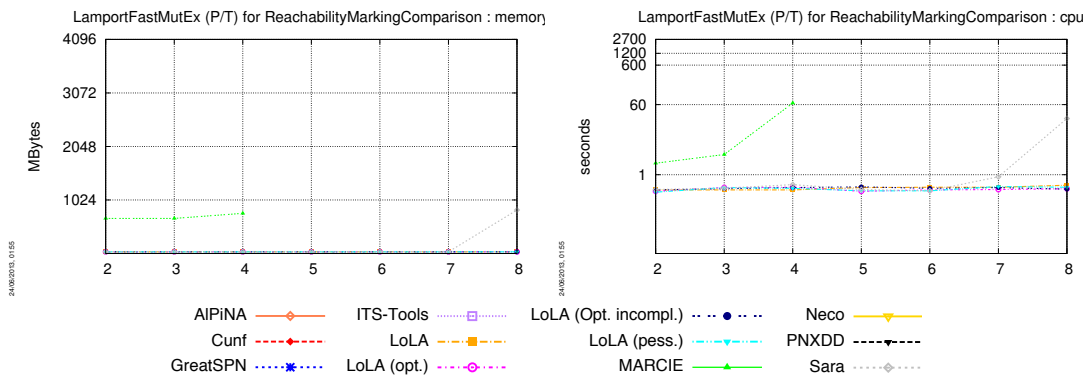
GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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.

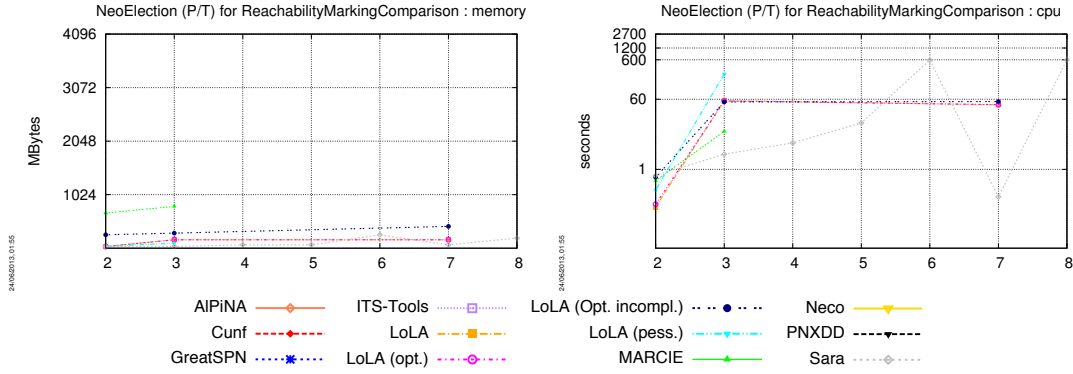
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

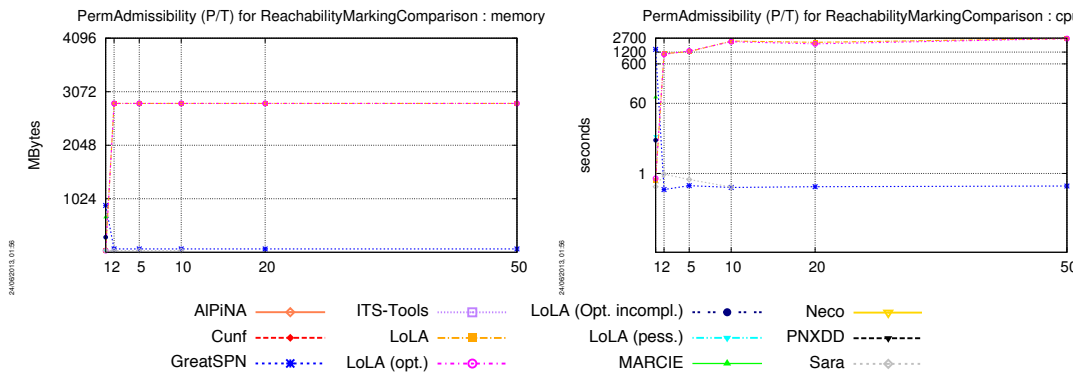
NeoElection (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

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



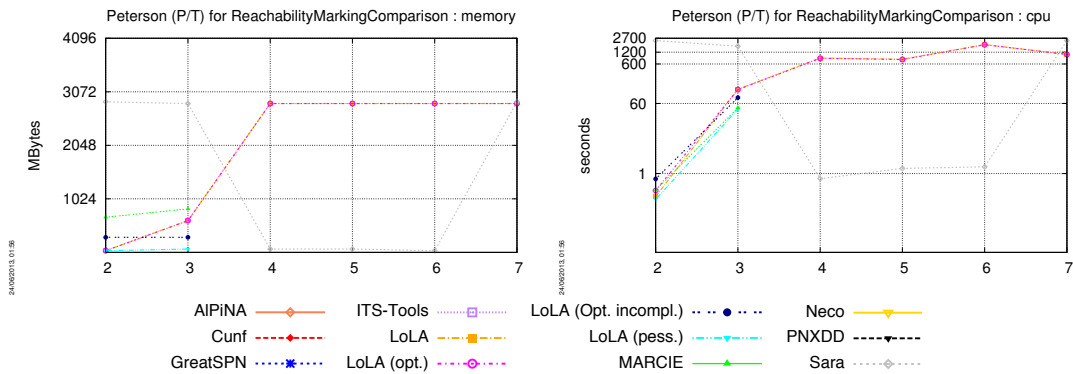
PermAdmissibility (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

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



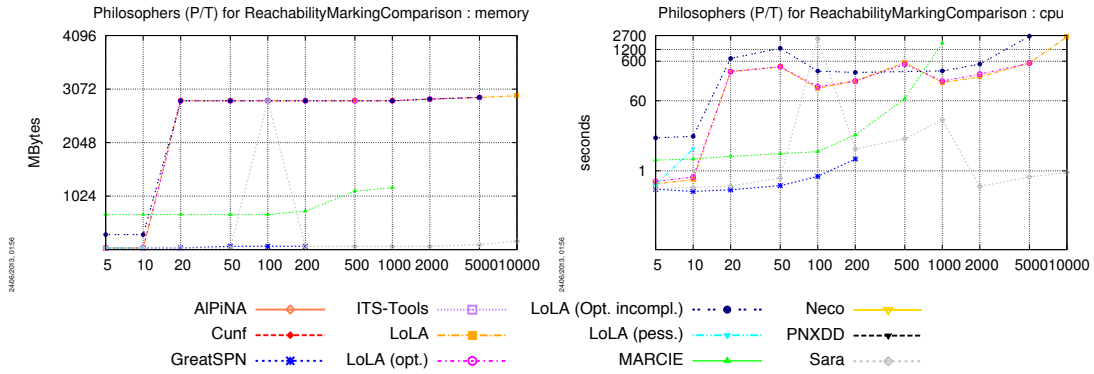
Peterson (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

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



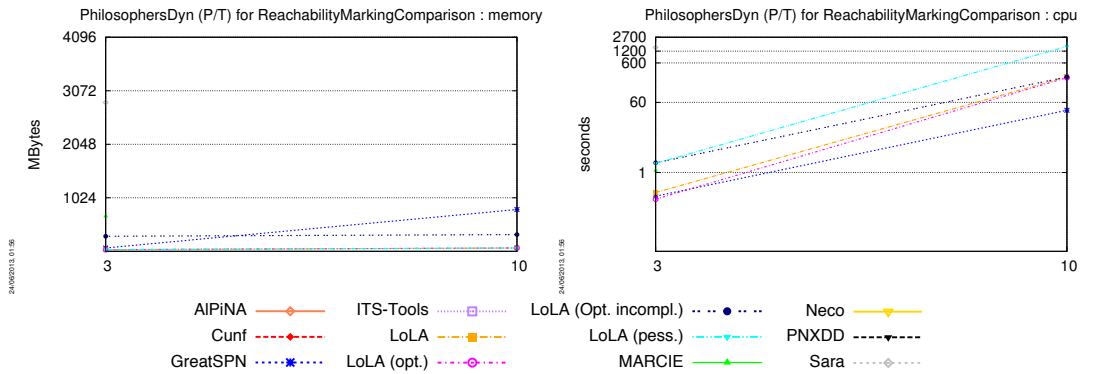
Philosophers (colored) No instance of this model could be computed for the **ReachabilityMarking-Comparison** examination.

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 **ReachabilityMarking-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 **ReachabilityMarking-Comparison** examination.

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

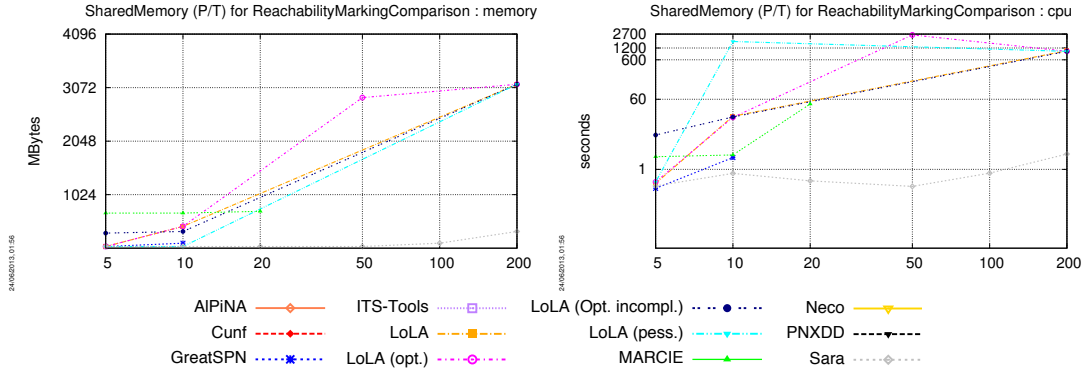
RessAllocation (P/T) No instance of this model could be computed for the **ReachabilityMarking-Comparison** examination.

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

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

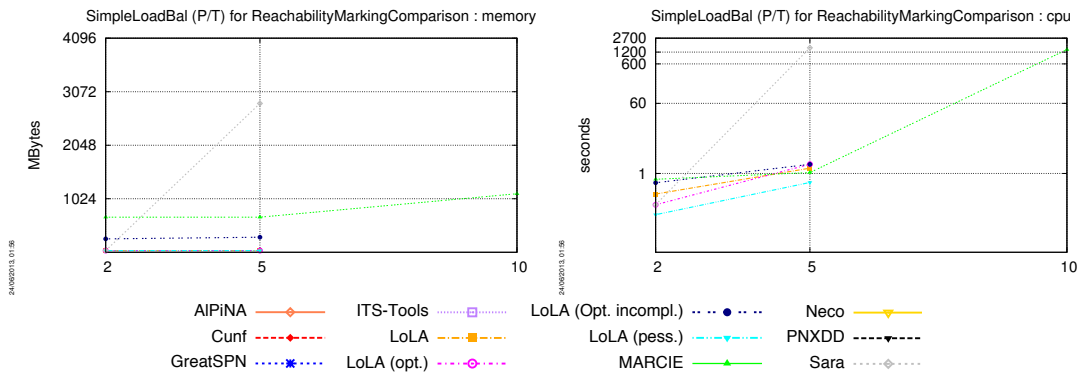
SharedMemory (colored) No instance of this model could be computed for the **ReachabilityMarking-Comparison** examination.

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



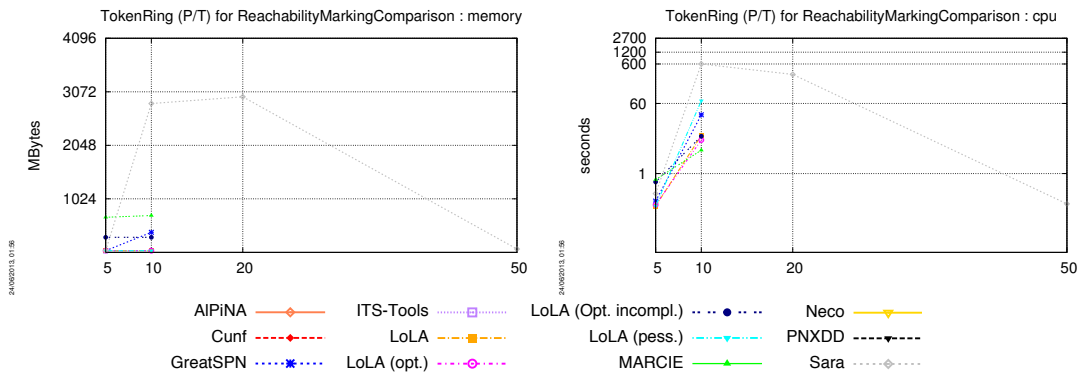
SimpleLoadBal (colored) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

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).

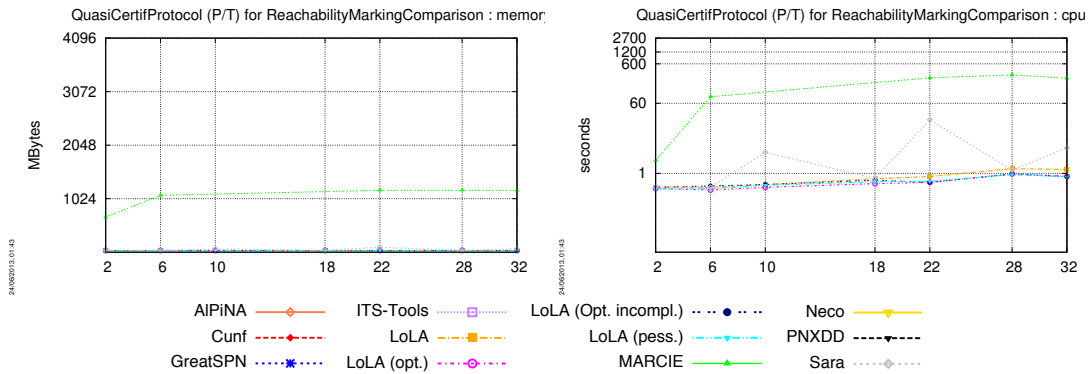


HouseConstruction (P/T) No instance of this model could be computed for the **ReachabilityMarkingComparison** examination.

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.

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

CSRepetitions (P/T)										
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara		
02	cc	FFFFFFFT	FFFFFFFT	FFFFF-F-	FFFFFFFT	FFFFFFFF	FFFFFFTT			
03	cc	TFTTTTTT	TFTTTTTT	-F-FFFFF	TFTTTTTT	FFFFFFFF	to			
04	cc	-FFFF--	-FFFF--	-FFFF--	to	to	to			
05	to	FFFF-FF	FFFF-FF	to	to	to	FFFFFFTT-			
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	nf		
015	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		
DotAndBoxes (colored)										
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara		
2	nc	nc	nc	nc	nc	nc	nc	nc		
3	nc	nc	nc	nc	nc	nc	nc	nc		
4	nc	nc	nc	nc	nc	nc	nc	nc		
5	nc	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	nc		
10	nc	nc	nc	nc	nc	nc	nc	nc		
DrinkVendingMachine (P/T)										
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara		
02	nc	TFFFFFFT	TFFFFFFT	-FFFF-F-	TFFFFFFT	FFFFFFFF	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	nf		
d02r11	nf	nf	nf	nf	nf	nf	nf	nf		
d02r15	nf	nf	nf	nf	nf	nf	nf	nf		
d02r19	nf	nf	nf	nf	nf	nf	nf	nf		
d03r03	nf	nf	nf	nf	nf	nf	nf	nf		
d03r05	nf	nf	nf	nf	nf	nf	nf	nf		
d03r07	nf	nf	nf	nf	nf	nf	nf	nf		
d04r03	nf	nf	nf	nf	nf	nf	nf	nf		
d05r03	nf	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	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		
FMS (P/T)										
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara		
002	nf	nf	nf	nf	nf	nf	nf	nf		
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		
GlobalResAlloc (colored)										

Instances	GreatSPN	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
GlobalResAlloc (P/T)								
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
03	cc	TFFFTIFF	TFFFTIFF	-FFF-FF	to	FFFFFFF	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	nf
0010	nf	nf	nf	nf	nf	nf	nf	nf
0020	nf	nf	nf	nf	nf	nf	nf	nf
0050	nf	nf	nf	nf	nf	nf	nf	nf
0100	nf	nf	nf	nf	nf	nf	nf	nf
0200	nf	nf	nf	nf	nf	nf	nf	nf
0500	nf	nf	nf	nf	nf	nf	nf	nf
1000	nf	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	nc
3	nc	nc	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
LamportFastMutEx (P/T)								
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
2	nc	cc	cc	cc	cc	cc	FFFFFFF	FFFFFFF
3	nc	cc	cc	cc	cc	cc	FFFFFFF	FFFFFFF
4	nc	cc	cc	cc	cc	cc	FFFFFFF	FFFFFFF
5	nc	cc	cc	cc	cc	cc	to	FFFFFFF
6	nc	cc	cc	cc	cc	cc	to	FFFFFFF
7	nc	cc	cc	cc	cc	cc	to	FFFFFFF
8	nc	cc	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	nf
020	nf	nf	nf	nf	nf	nf	nf	nf
040	nf	nf	nf	nf	nf	nf	nf	nf
080	nf	nf	nf	nf	nf	nf	nf	nf
160	nf	nf	nf	nf	nf	nf	nf	nf
320	nf	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	nc
3	nc	nc	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	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
2	nc	TTTTTFF	TTTTTFF	---FFF	TTTTTFF	FFFFFFF	TTTTTFF	

3	nc	TTTTFTTT	TTTTFTTT	--FF--	TTTTFTTT	FFFTTFFF	TTTTFTTF
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	TFTTFFF	TFTTFFF	-F-F-FFF	cc	FFFFFFF	FFFFFFF
02	cc	FFFFF-F-	FFFFF-F-	to	to	to	FTTFFFFF
05	?????FTT	-FFFFFF	-FFFFFF	to	to	to	FFFTFFF
10	?????FFF	-F-F-FFF	-F-F-FFF	to	to	to	FFFFFFF
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	TTTTTTTT	TTTTTTTT	--F--	TTTF-TTT	FFFTFFF	FTTT-T-
3	nc	TFFFFTTT	TFFFFTTT	-FFFF--	TFFFFTTT	FFFTFFF	FTTF-TT
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	TTTTFFF
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	TTTTFFF	TTTTFFF	--FFFF	TTTTFFF	FFFTFFF	TTTTFFF
000010	cc	TFFFFTF	TFFFFTF	-FFFF-FF	TFFFFTF	FFFTFFF	FFFTTF
000020	cc	-F-FFFF	-F-FFFF	-F-FFFF	to	FFFTFFF	FFFTFFF
000050	cc	-F-FF-F-	-F-FF-F-	-F-FF-F-	to	FFFTFFF	TTTTFFF
000100	cc	FFFFF-F-	FFFFF-F-	FFFFF-F-	to	FFFTFFF	FF--TTT

000200	cc	FFFFF-F-	FFFFF-F-	FFFFF-F-	to	FFFFFFF	FFFFFFTT-	
000500	to	-F-F-F-	-F-F-F-	to	to	FFFFFFF	FFFFFFTT	
001000	mp	-F-FFFF	-F-FFFF	-F-FFFF	to	FFFFFFF	-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	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	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
03	cc	TFTFTFT	TFTFTFT	-F-FF-F-	TFTFTFT	FFFFFFF	FFFF-FF-	
10	cc	TFTFTTT	TFTFTTT	-F-FF--	TFTFTTT	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	nf	
Railroad (P/T)								
Instances	GreatSPN	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
RessAllocation (P/T)								
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
R002C002	nf	nf	nf	nf	nf	nf	nf	nf
R003C002	nf	nf	nf	nf	nf	nf	nf	nf
R003C003	nf	nf	nf	nf	nf	nf	nf	nf
R003C005	nf	nf	nf	nf	nf	nf	nf	nf
R003C010	nf	nf	nf	nf	nf	nf	nf	nf
R003C015	nf	nf	nf	nf	nf	nf	nf	nf
R003C020	nf	nf	nf	nf	nf	nf	nf	nf
R003C050	nf	nf	nf	nf	nf	nf	nf	nf
R003C100	nf	nf	nf	nf	nf	nf	nf	nf
R005C002	nf	nf	nf	nf	nf	nf	nf	nf
R010C002	nf	nf	nf	nf	nf	nf	nf	nf
R015C002	nf	nf	nf	nf	nf	nf	nf	nf
R020C002	nf	nf	nf	nf	nf	nf	nf	nf
R050C002	nf	nf	nf	nf	nf	nf	nf	nf
R100C002	nf	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	nf
RwMutex (P/T)								
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
r0010w0010	nf	nf	nf	nf	nf	nf	nf	nf
r0010w0020	nf	nf	nf	nf	nf	nf	nf	nf
r0010w0050	nf	nf	nf	nf	nf	nf	nf	nf
r0010w0100	nf	nf	nf	nf	nf	nf	nf	nf
r0010w0500	nf	nf	nf	nf	nf	nf	nf	nf
r0010w1000	nf	nf	nf	nf	nf	nf	nf	nf
r0010w2000	nf	nf	nf	nf	nf	nf	nf	nf
r0020w0010	nf	nf	nf	nf	nf	nf	nf	nf
r0100w0010	nf	nf	nf	nf	nf	nf	nf	nf
r0500w0010	nf	nf	nf	nf	nf	nf	nf	nf

r1000w0010	nf	nf	nf	nf	nf	nf	nf	nf
r2000w0010	nf	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	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	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
000005	cc	TFTFTTF	TFTFTTF	-F-F-F	-F-F-F-	FFFFFFF	FFFFFFT	
000010	cc	TFFFFFF	TFFFFFF	-FFFFF-	-FFFFF-	FTFTTF	FTFTTF	
000020	mp	to	to	to	to	FFFFFFF	FFFFFFF	
000050	mp	to	-FFFF-F	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	nc
05	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc	nc	nc
20	nc	nc	nc	nc	nc	nc	nc	nc
SimpleLoadBal (P/T)								
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
02	nc	TTFTFT	TTFTFT	--FF-F-	--FF-F-	FTFTTF	TTTTTF	
05	nc	TFTFT	TFTFT	-F-FF-F-	TFTFT	FFFFFFF	FFF-FF-	
10	nc	to	to	to	to	FFFFFFF	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	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	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
005	cc	TTFTFT	TTFTFT	--F-F-	TTFTFT	FFFFFFF	TTTTTT	
010	cc	TTFTFT	TTFTFT	--F-F-	TTFTFT	FFFFFFF	FFF-FTT	
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	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
IBMB2S565S3960 (P/T)							
instances	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
none	nf	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	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	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
02	cc	cc	cc	cc	FFFFFFFF	FFFFFFFF	
06	cc	cc	cc	cc	FFFFFFFF	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	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	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

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
GlobalResAlloc (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	0
best	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0
GlobalResAlloc (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	peSS	Marcie Sara
1st instance	0	1	1	1	1	1	1	0
instances	0	1	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	0	2	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	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
LamportFastMutEx (Colored)								
	GreatSPN	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
LamportFastMutEx (P/T)								
	GreatSPN	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	7
max reached	0	0	0	0	0	0	0	2
best	0	0	0	0	0	0	0	2
subtotal	0	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	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
NeoElection (Colored)								
	GreatSPN	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
NeoElection (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	peSS	Marcie Sara
1st instance	0	1	1	1	1	1	1	1
instances	0	3	3	3	3	2	2	6
max reached	0	0	0	0	0	0	0	2
best	0	0	0	0	0	0	0	2
subtotal	0	4	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	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
PermAdmissibility (P/T)								

	GreatSPN	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
1st instance	1	1	1	1	1	0	1	1
instances	4	6	6	1	0	0	1	4
max reached	0	2	2	0	0	0	0	0
best	0	2	2	0	0	0	0	0
subtotal	5	11	11	2	0	0	2	5
Peterson (Colored)								
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
Peterson (P/T)								
1st instance	0	1	1	1	1	1	1	1
instances	0	6	6	2	2	2	2	6
max reached	0	2	2	0	0	0	0	2
best	0	2	2	0	0	0	0	2
subtotal	0	11	11	3	3	3	3	11
Philosophers (Colored)								
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)								
1st instance	0	1	1	1	1	1	1	1
instances	0	11	10	9	2	8	8	8
max reached	0	2	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0
subtotal	0	16	11	10	3	9	9	9
PhilosophersDyn (Colored)								
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)								
1st instance	0	1	1	1	1	1	1	1
instances	0	2	2	2	2	2	1	1
max reached	0	0	0	0	0	0	0	0
best	0	2	2	2	2	2	0	0
subtotal	0	5	5	5	5	5	2	2
Planning (P/T)								
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)								
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			
RessAllocation (P/T)											
	GreatSPN	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	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	pass	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	pass	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	pass	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	pass	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	pass	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	pass	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	pass	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	pass	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	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	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
IBMB2S565S3960 (P/T)									
	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
QuasiCertifProtocol (Colored)									
	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
QuasiCertifProtocol (P/T)									
	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	2	7	
max reached	0	0	0	0	0	0	0	2	
best	0	0	0	0	0	0	0	2	
subtotal	0	0	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	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

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 71 points	LoLA 71 points	LoLa opt 69 points

For “Surprise” Models

1	2
	
Sara 12 points	Marcie 3 points

Global

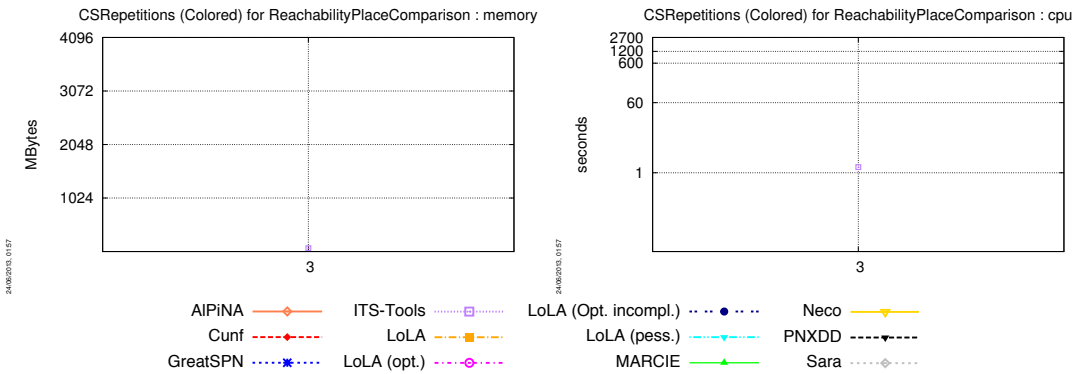
1	2	3
		
Sara 95 points	LoLA 71 points	LoLa opt 69 points

11 The ReachabilityPlaceComparison Examination

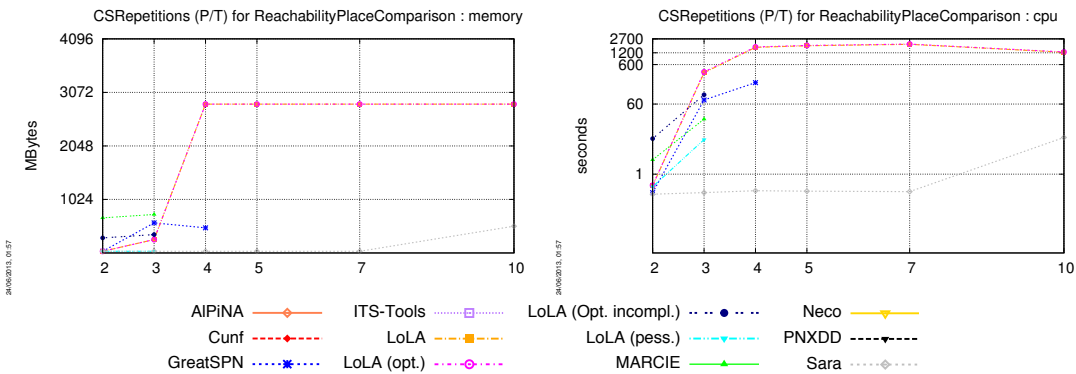
This examination deals with reachability properties dealing with the comparison of places marking only. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant executions.

11.1 Handling of Models by Tools

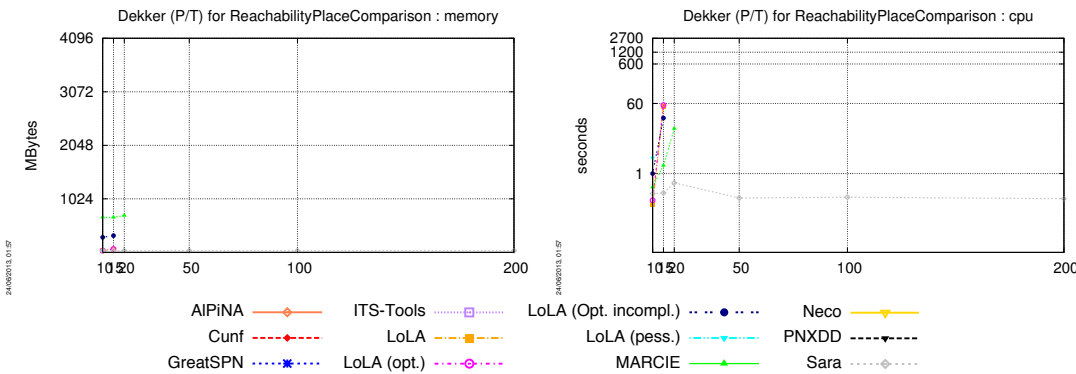
CSRepetitions (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



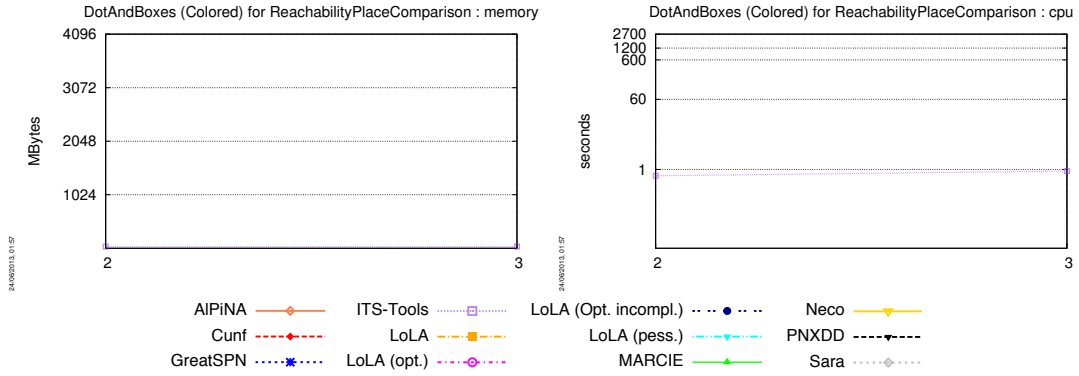
CSRepetitions (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



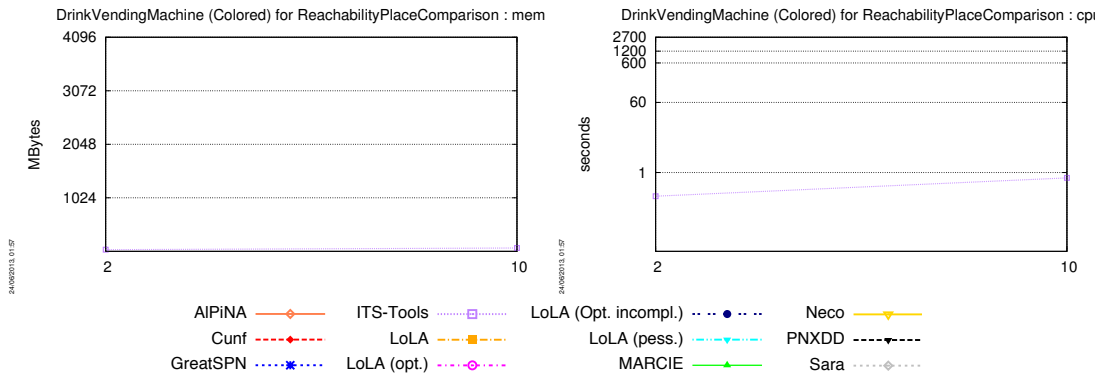
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



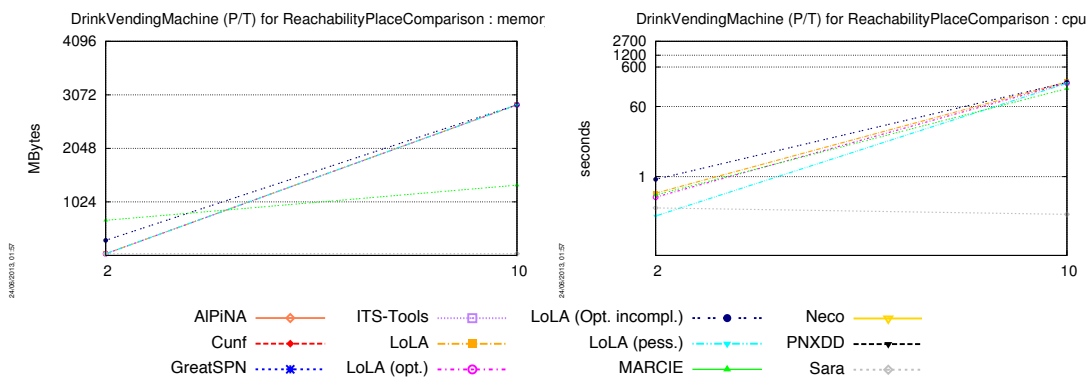
DotAndBoxes (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



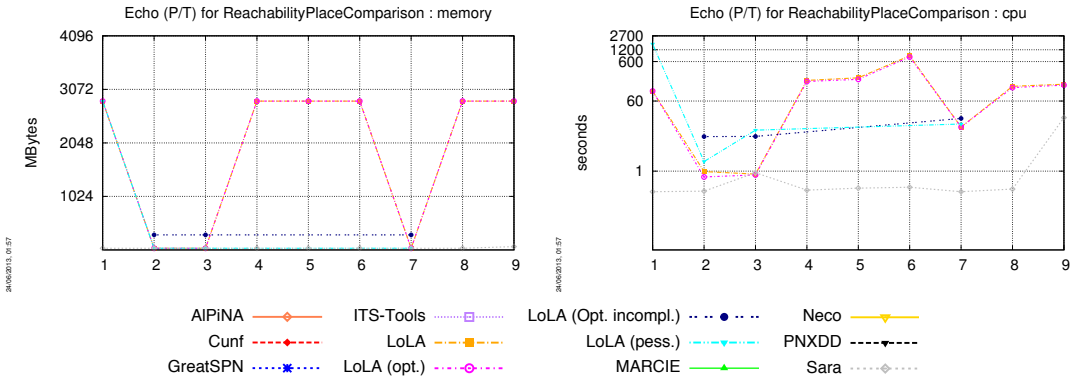
DrinkVendingMachine (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



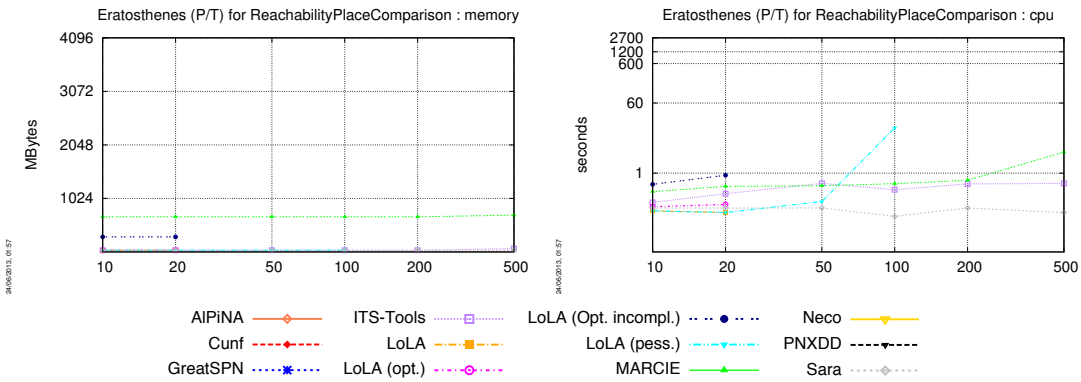
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



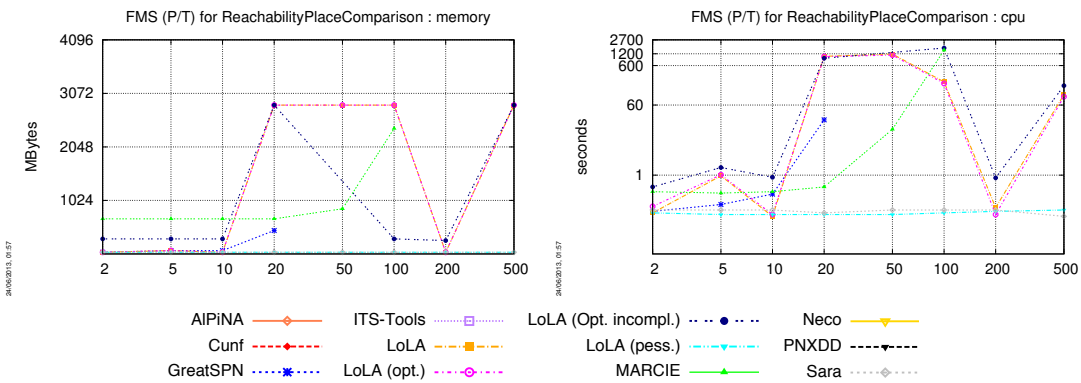
Echo (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



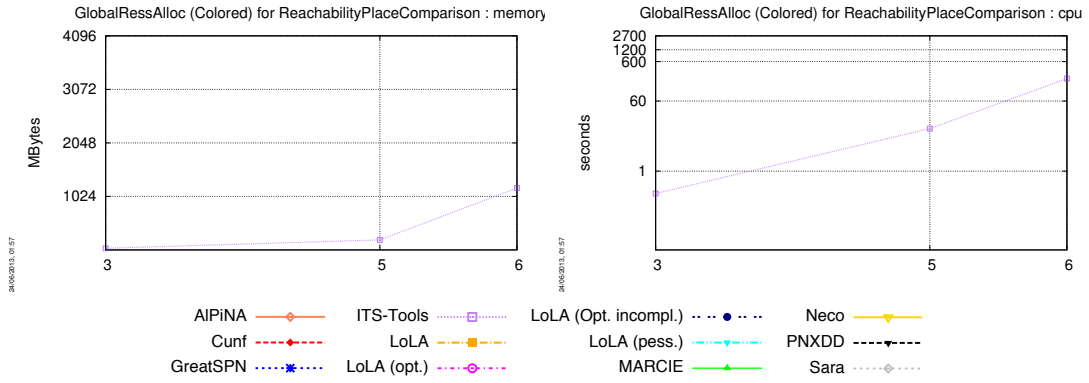
Eratosthenes (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



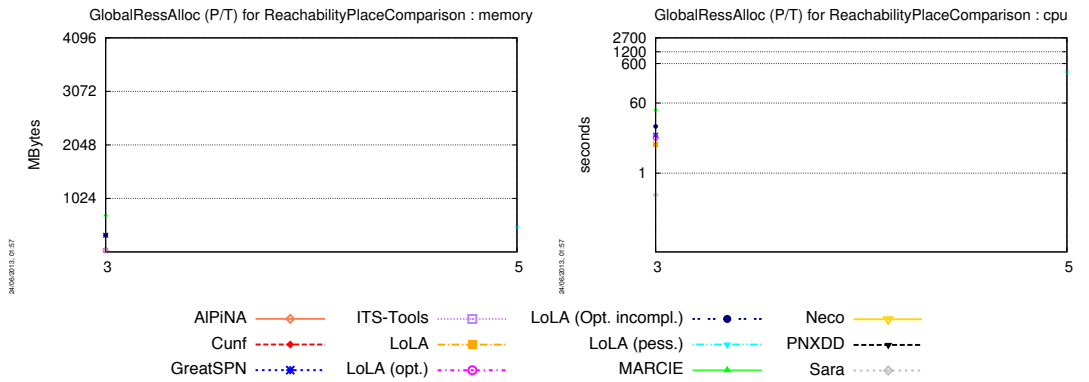
FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



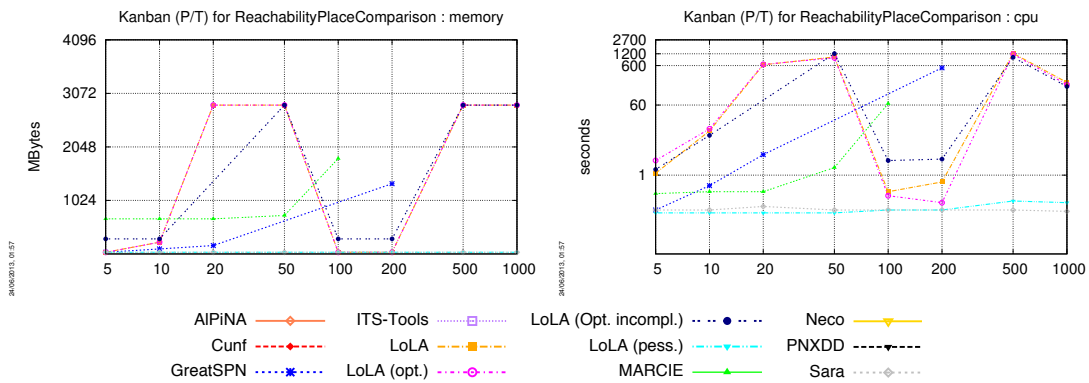
GlobalResAlloc (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



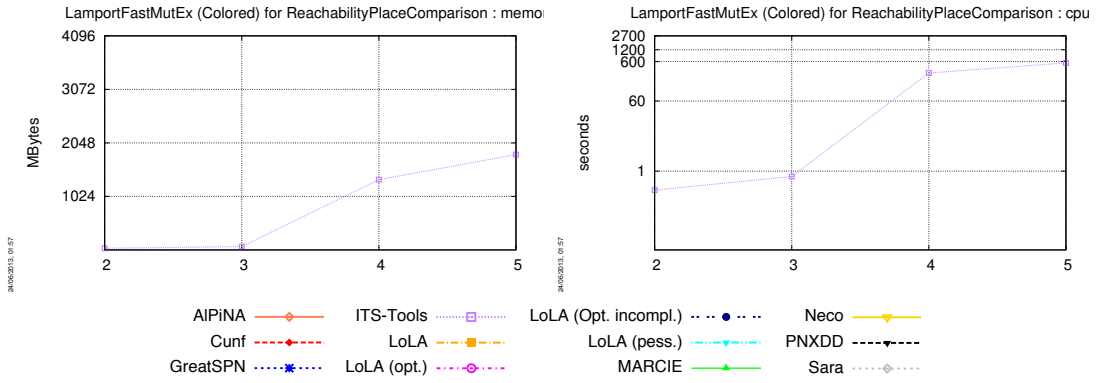
GlobalResAlloc (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



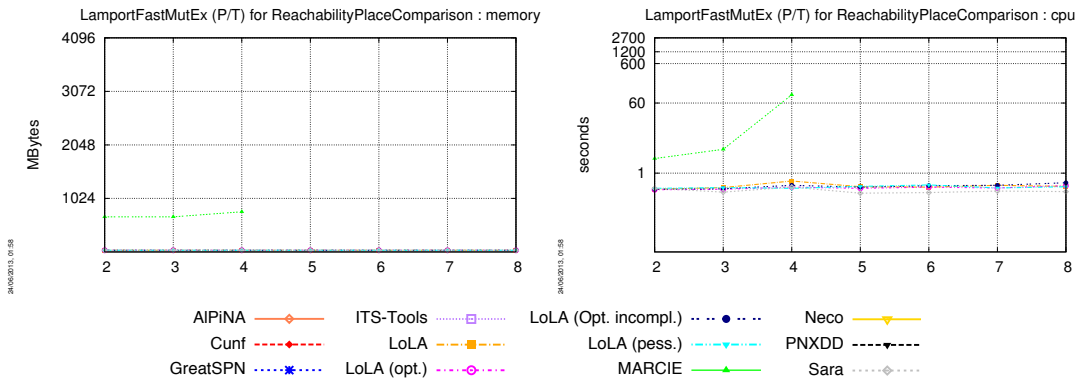
Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



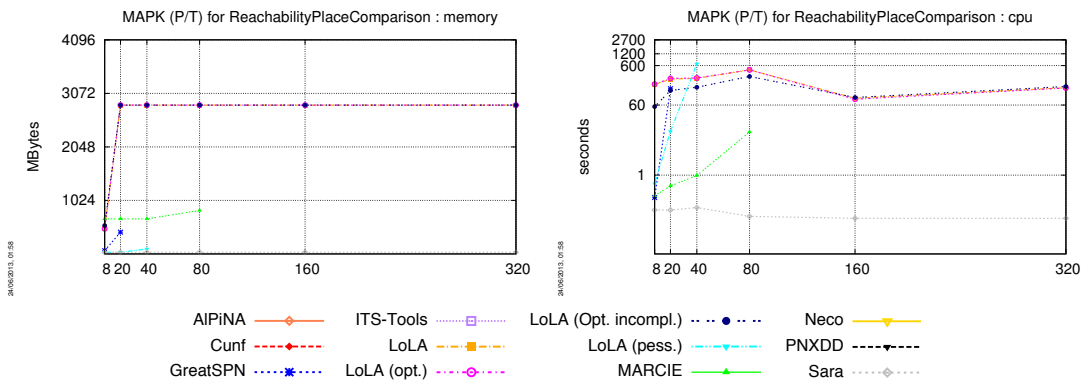
LamportFastMutEx (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



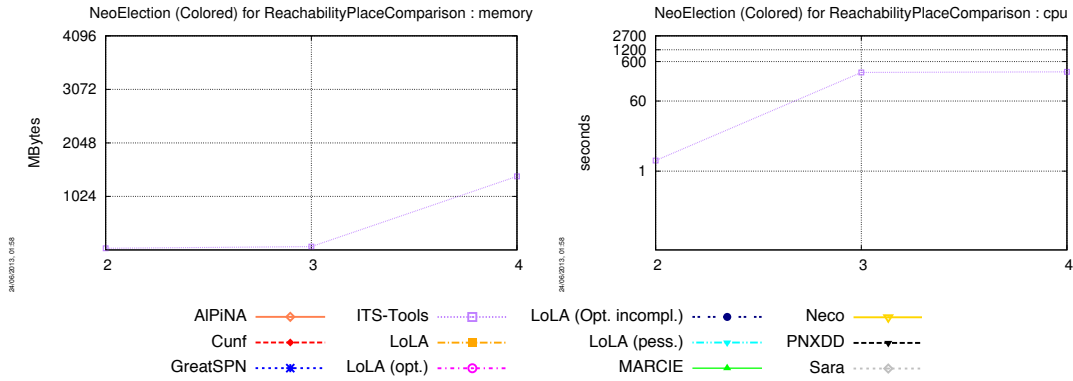
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



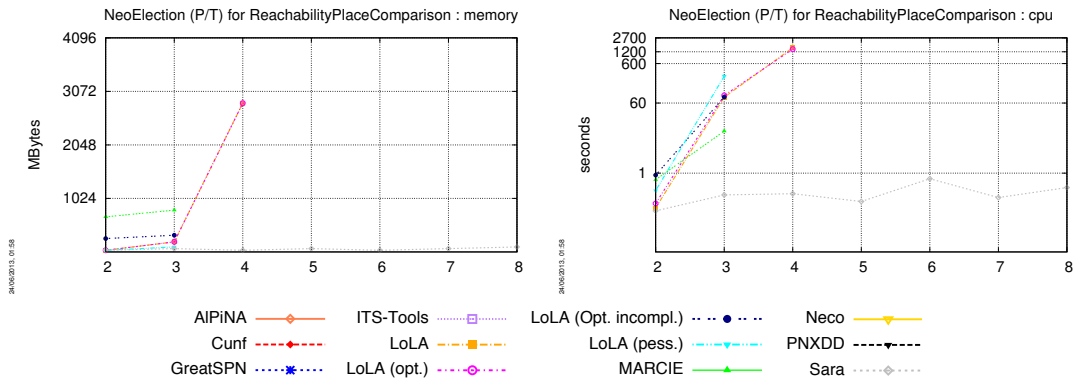
MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



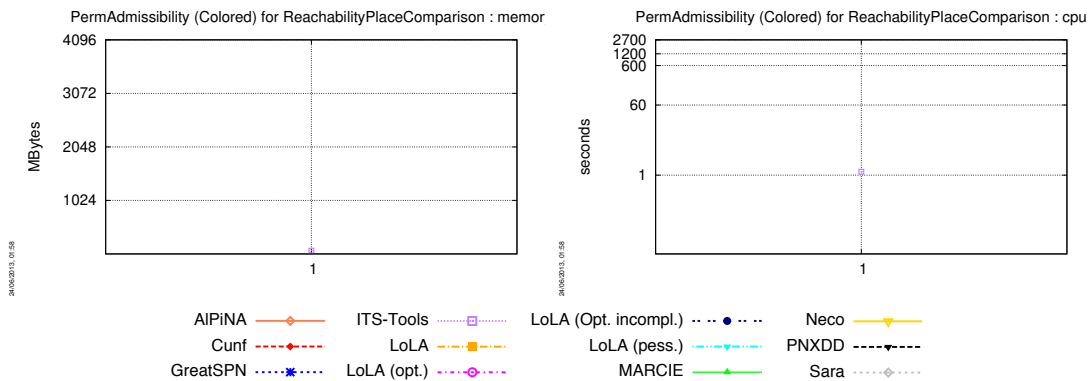
NeoElection (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



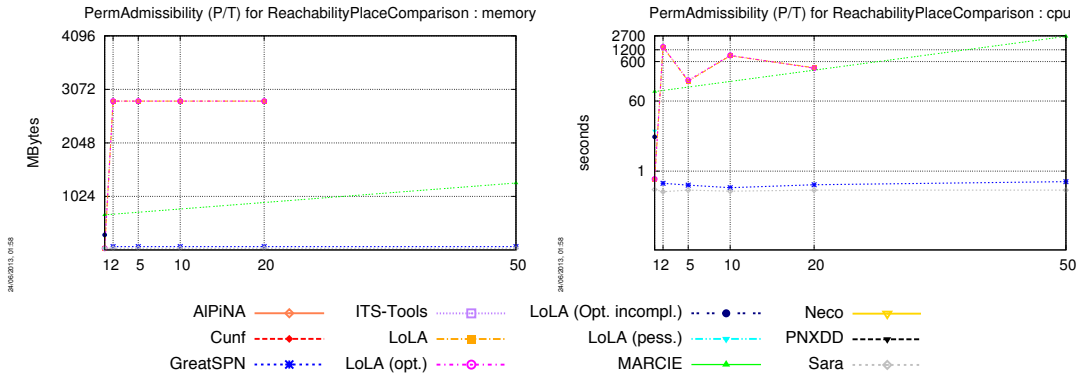
NeoElection (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



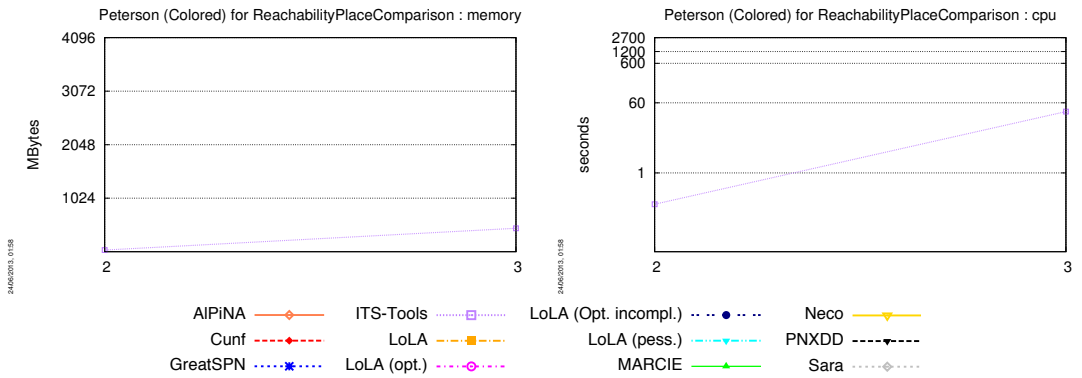
PermAdmissibility (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



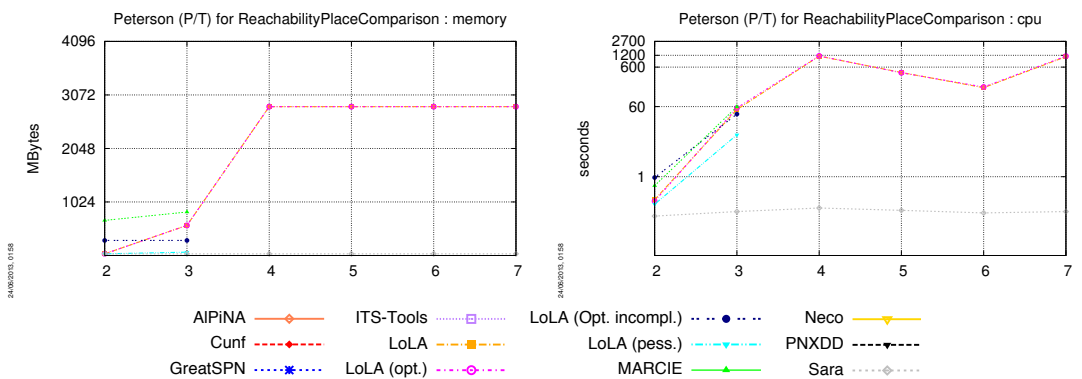
PermAdmissibility (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

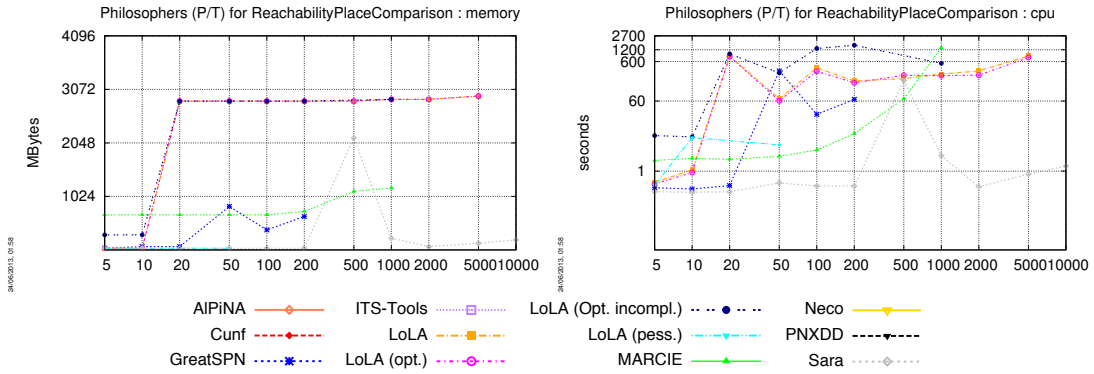


Peterson (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



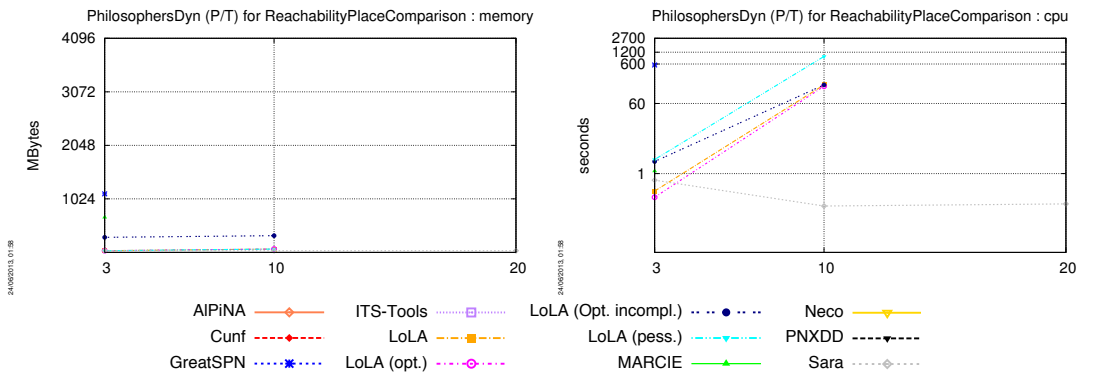
Philosophers (colored) No instance of this model could be computed for the **ReachabilityPlaceComparison** examination.

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



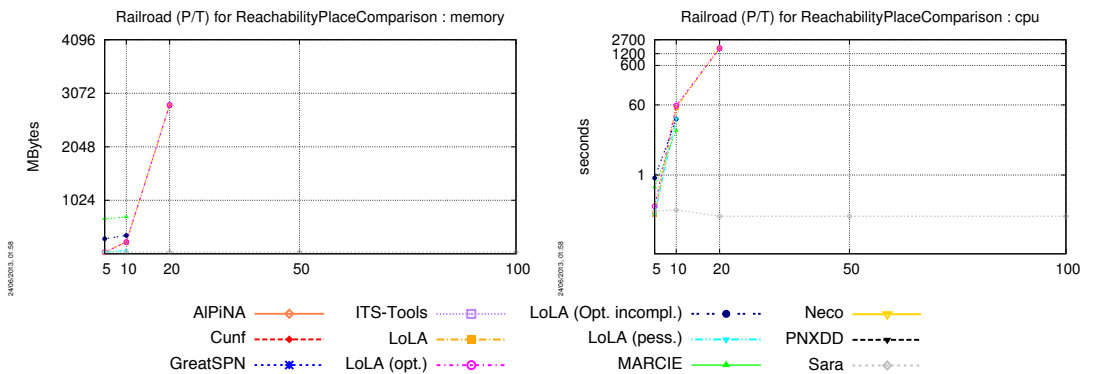
PhilosophersDyn (colored) No instance of this model could be computed for the **ReachabilityPlaceComparison** examination.

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

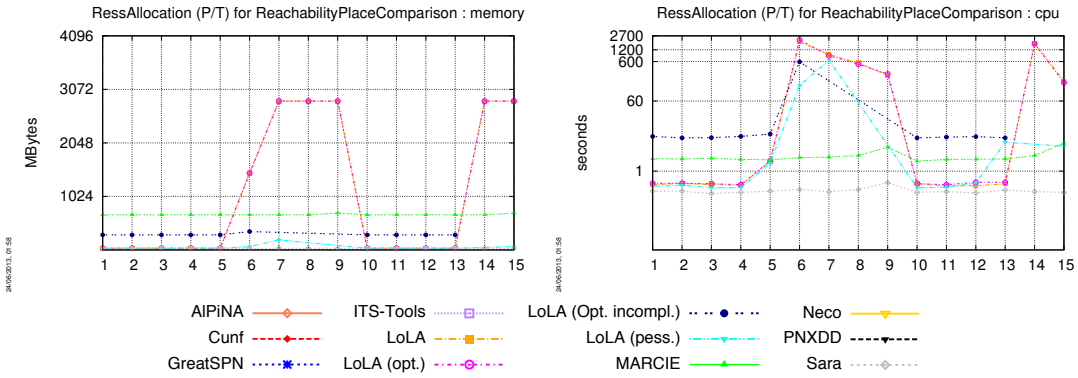


Planning (P/T) No instance of this model could be computed for the **ReachabilityPlaceComparison** examination.

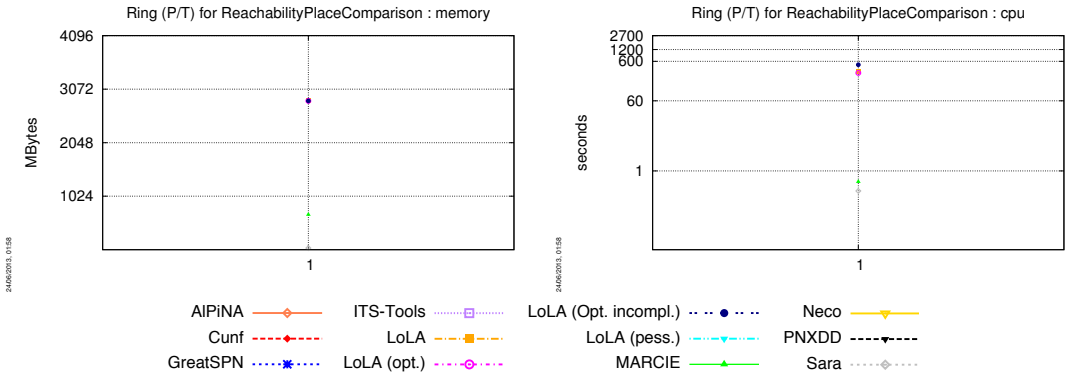
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



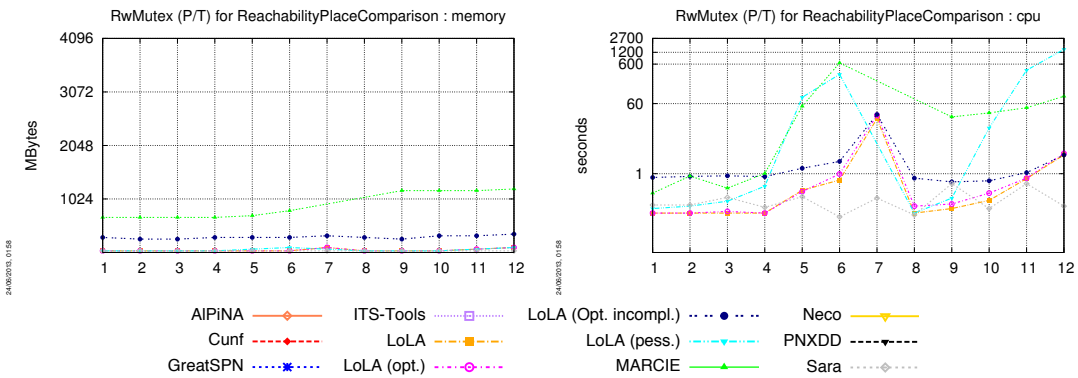
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

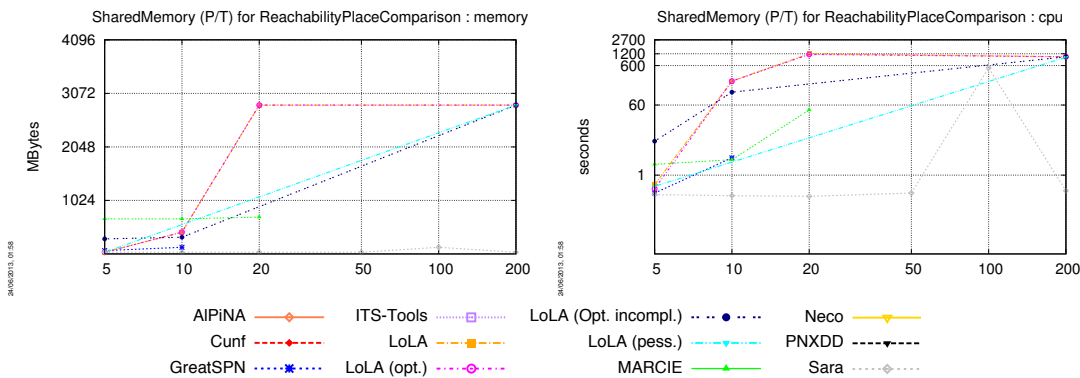


RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

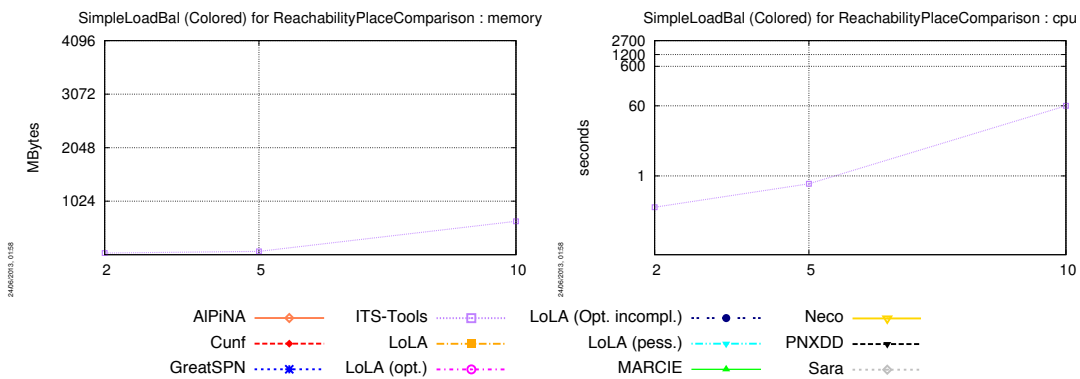


SharedMemory (colored) No instance of this model could be computed for the **ReachabilityPlace-Comparison** examination.

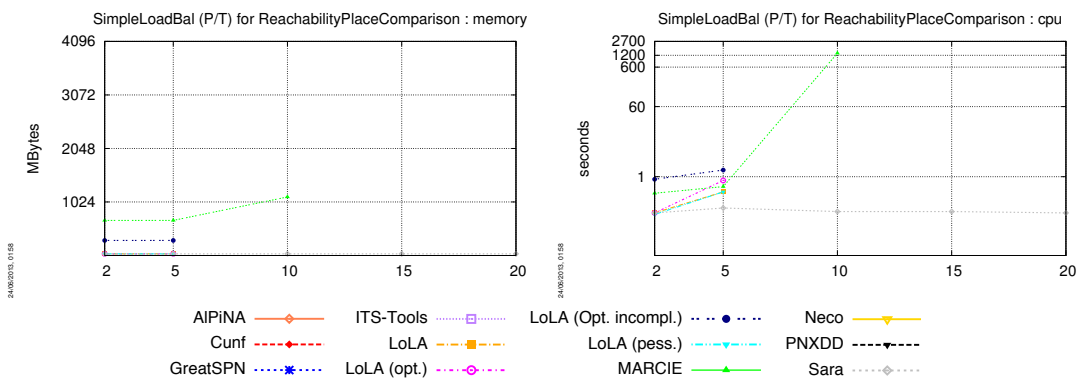
SharedMemory (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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



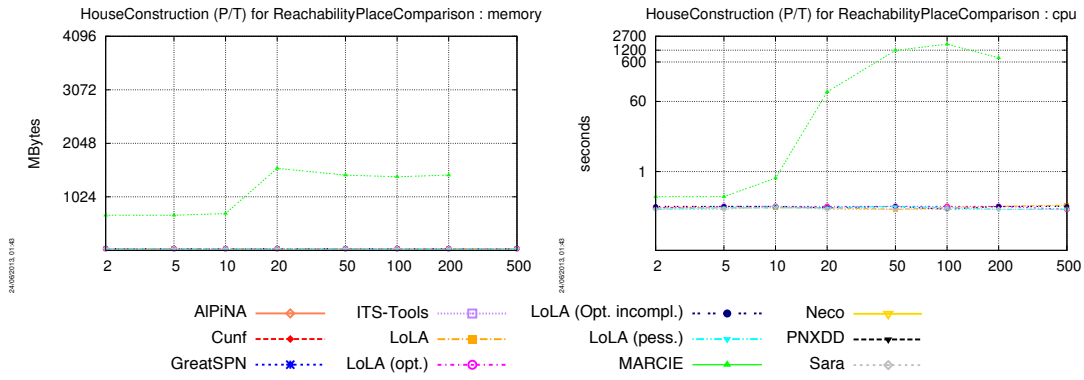
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



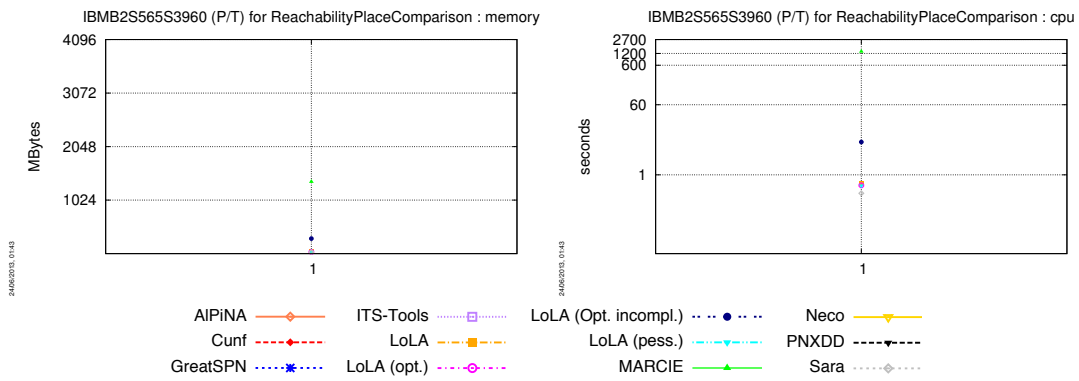
TokenRing (colored) No instance of this model could be computed for the **ReachabilityPlaceComparison** examination.

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).

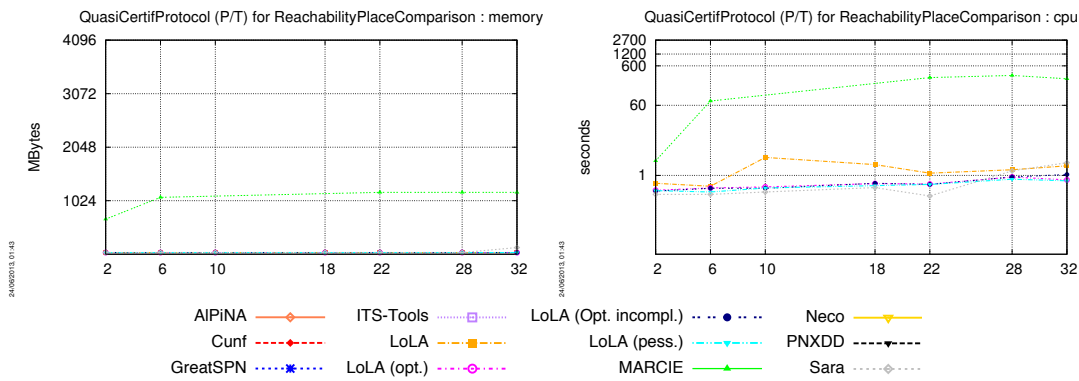


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

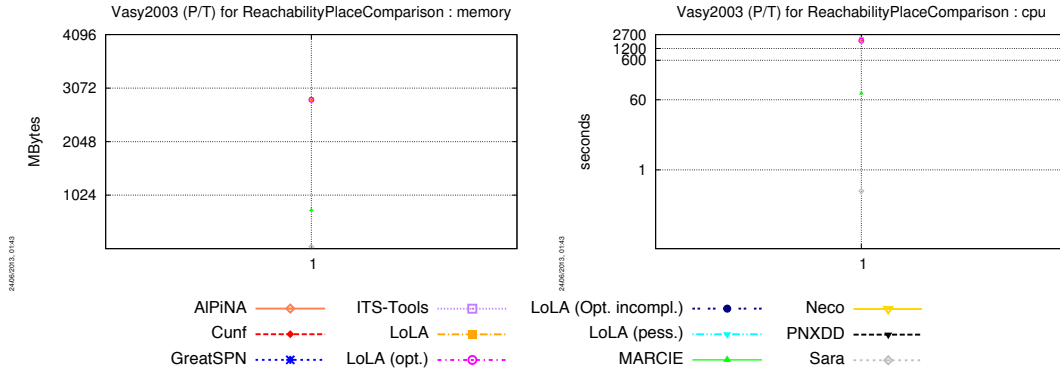


QuasiCertifProtocol (colored) No instance of this model could be computed for the **Reachability-PlaceComparison** examination.

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 “Surprise” 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	nc	
03	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc	
04	nc	mp	nc	nc	nc	nc	nc	nc	nc	
05	nc	mp	nc	nc	nc	nc	nc	nc	nc	
07	nc	mp	nc	nc	nc	nc	nc	nc	nc	
10	nc	mp	nc	nc	nc	nc	nc	nc	nc	
CSRepetitions (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara	
02	FTFTFFF	nc	TTTTFFFT	TTTTFFFT	--FFFF-	--FFFF-	FFFTTFFF	---	TI-	
03	FFFFFFF	nc	TTTTFFFT	TTTTFFFT	--FFF-	TTTTFFFT	FFFTTFFF	---	TI-	
04	FFFTTFFF	nc	FFTF--	FFTF--	to	to	to	to	cc	
05	to	nc	-FFF--	-FFF--	to	to	to	to	cc	
07	mp	nc	--F--	--F--	to	to	to	to	cc	
10	mp	nc	--FF-FF	--FF-FF	to	to	to	to	---	T-
Dekker (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara	
010	nc	nc	FFFFFFFT	FFFFFFFT	FFFF-F-	FFFFFFFT	FFFFFFF	cc		
015	nc	nc	TFTFTFT	TFTFTFT	-F-FF-F-	to	FFFFFFF	cc		
020	nc	nc	to	to	to	to	FFFFFFF	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	pass	Marcie Sara
2	nc	FFFFFF	nc	nc	nc	nc	nc	nc	nc
3	nc	FFFFFF	nc	nc	nc	nc	nc	nc	nc
4	nc	cc	nc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (colored)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
02	nc	FFFFFF	nc	nc	nc	nc	nc	nc	nc
10	nc	FFFFFF	nc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
02	nc	nc	TTTTTFT	TTTTTFT	---	---	TTTTTFT	FFFFFF	cc
10	nc	nc	cc	cc	cc	cc	cc	FFFFFF	cc
Echo (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
d02r09	nc	nc	-F-FFFF	-F-FFFF	to	to	-F-FF--	to	cc
d02r11	nc	nc	FFFFFF	FFFFFF	FFFFFF	FFFFFF	FFFFFF	to	cc
d02r15	nc	nc	FFFFFF	FFFFFF	FFFFFF	FFFFFF	----F	to	---T
d02r19	nc	nc	-FFFF--	-FFFF--	to	to	to	to	cc
d03r03	nc	nc	-F-FFFF	-F-FFFF	to	to	to	to	---TT-
d03r05	nc	nc	--F-FF	--F-FF	to	to	to	to	cc
d03r07	nc	nc	FFFFFF	FFFFFF	FFFFFF	FFFFFF	FFFFFF	to	cc
d04r03	nc	nc	-FFFF-F-	-FFFF-F-	to	to	to	to	cc
d05r03	nc	nc	-F-FFFF	-F-FFFF	to	to	to	to	---TTT
Eratosthenes (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
010	nc	FFFFFF	FFFFFFTT	FFFFFFTT	FFFFF--	FFFFF--	FTFTTT	FFFFFF	cc
020	nc	FFFF	FFFFFF	FFFFFF	FFFFFF	FFFFFF	FF-FFFF	FFTTFF	cc
050	nc	FFFF	to	to	to	to	TF-FTF	FFFFFF	cc
100	nc	FFFFFF	to	to	to	to	TFTTF-	FFTTFF	cc
200	nc	FFFF	to	to	to	to	to	FFFFFF	---TTT
500	nc	FFFFFF	to	to	to	to	to	FFFFFF	cc
FMS (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
002	FFFFFFF	nc	TTTTFFF	TTTTFFF	---FFF	---	---FFF	FFFFFF	---T
005	FFFFFF	nc	TTTTFT	TTTTFT	--F-F-	--F-F-	---	FFFFFF	cc
010	FFFFFF	nc	FFFFFF	FFFFFF	FFFFFF	FFFFFF	FFFFFF	FFFFFF	cc
020	FFFFFF	nc	T-T-F-FF	T-T-F-FF	--F-FF	--F-FF	---	FFFFFF	cc
050	to	nc	---FF	---FF	to	to	---	FFFFFF	cc
100	mp	cc	-F-FFFF	-F-FFFF	-F-FFFF	-F-FFFF	-F-FF-FF	FFFFFF	---T
200	to	nc	FFFFFF	FFFFFF	FFFFFF	---	---FF-	to	cc
500	to	nc	-F-FFFF	-F-FFFF	-F-FFFF	-F-FFFF	-F-FF-F-	to	cc
GlobalResAlloc (colored)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
03	nc	FFFFFF	nc	nc	nc	nc	nc	nc	nc
05	nc	FTFTFFF	nc	nc	nc	nc	nc	nc	nc
06	nc	FFFFFF	nc	nc	nc	nc	nc	nc	nc
07	nc	mp	nc	nc	nc	nc	nc	nc	nc
09	nc	mp	nc	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc	nc
11	nc	mp	nc	nc	nc	nc	nc	nc	nc
GlobalResAlloc (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc LoLa	pass	Marcie Sara
03	FFFFFF	nc	TFTFTF	TFTFTF	-F-FF-FF	---	to	FFFFFF	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	TFTEFFFF	TFTEFFFF	-F-FFFF	--F--	FFFTFFFF	--TT-		
0010	FFFFFFFF	nc	FFFFFTFT	FFFFFTFT	FFFFF-F-	-F-F--	FFTTFFFF	cc		
0020	FFFFFFFF	nc	-F-FFFF	-F-FFFF	to	-F-FFFF	FFFFFFFF	cc		
0050	to	nc	--FF-F-	--FF-F-	--FF-F-	--FF--	FFFTFFFF	cc		
0100	to	nc	FFFFFFFF	FFFFFFFF	FFFFFFFF	--F-F-	FFFTFFFF	cc		
0200	TTTT	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	nc	nc
3	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
4	nc	FTTEFFFF	nc	nc	nc	nc	nc	nc	nc	nc
5	nc	FFFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
8	nc	mp	nc	nc	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	cc	FFFFFFFF	---TT	
3	nc	nc	cc	cc	cc	cc	cc	FFFFFFFF	cc	
4	nc	nc	cc	cc	cc	cc	cc	FFTTFFFF	cc	
5	nc	nc	cc	cc	cc	cc	cc	to	cc	
6	nc	nc	cc	cc	cc	cc	cc	to	cc	
7	nc	nc	cc	cc	cc	cc	cc	to	cc	
8	nc	nc	cc	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	TTTTTTT	TTTTTTT	--F--	--F--	FFFTFFFF	cc		
020	FFFFFFFF	nc	-FFFF-FF	-FFFF-FF	-FFFF-FF	-FFFF-FF	FFFTFFFF	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-FFFF	-F-FFFF	-F-FFFF	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	nc	nc
3	nc	FFFF	nc	nc	nc	nc	nc	nc	nc	nc
4	nc	FTTEFTT	nc	nc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
8	nc	mp	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	TTTTTTT	TTTTTTT	--FF--	TTTTTTT	FFTTFFFF	cc		
3	nc	nc	TTTTTTT	TTTTTTT	--FF--	TTTTTTT-	FFTTFFFF	---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	nc	nc
02	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
05	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc

50	nc	mp	nc	nc	nc	nc	nc	nc	nc
PermAdmissibility (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	Marcie	Sara
01	to	nc	FFFFFFTT	FFFFFFTT	FFFFF--	FFFFF--	FFFFFFF	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	FTFTFTT	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	pass	Marcie	Sara
2	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
4	nc	mp	nc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc	nc
Peterson (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	Marcie	Sara
2	nc	nc	TTTTTFT	TTTTTFT	---F-	TTTT-F-	FFFFFFF	---T-	
3	nc	nc	TFTFFFF	TFTFFFF	-F-FFFF	-F-FFFF	FFFFFFF	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	pass	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	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	Marcie	Sara
000005	FFFFFFF	nf	TFTTFFF	TFTTFFF	-F-F-FFF	TFTFT--	FFFFFFF	---T	
000010	FTFTFFF	nf	TFTFTFF	TFTFTFF	-FFF-FF	-FTFTF	FTFTFFF	cc	
000020	FFFFFFF	nf	--FFFF	--FFFF	--FFFF	to	FTFTFFF	cc	
000050	FFFFFFF	nf	-FFFFFF	-FFFFFF	-FFFFFF	FFF-FFF	FTFTFFF	cc	
000100	FFFFFFF	nf	-F-FF-F-	-F-FF-F-	-F-FF-F-	to	FFFFFFF	cc	
000200	FFFFFFF	nf	-F-FFFF	-F-FFFF	-F-FFFF	to	FFFFFFF	cc	
000500	to	nf	--FF-FF	--FF-FF	to	to	FTFTFFF	cc	
001000	mp	nf	-F-FF-F-	-F-FF-F-	-F-FF-F-	to	FTFTFFF	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	pass	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	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pass	Marcie Sara
03	FFFFFFF	nc	TTTTTFF	TTTTTFF	---	FFF	TTTTTFF	FFFFFFF	cc	
10	mp	nc	TFFFFTFT	TFFFFTFT	-FFF	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	pass	Marcie Sara
nf	nf	nf	nf	nf	nf	nf	nf	nf	nf	
Railroad (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pass	Marcie Sara
005	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF		FFFFFFF	FFFTTFF	cc	
010	nc	nc	FFFFFFFT	FFFFFFFT	FFFFF-		FFFFF-	FFFFFFF	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	
ResAllocation (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pass	Marcie Sara
R002C002	nc	nc	TTTTTFF	TTTTTFF	--F-FF		--F-	FFFFFFF	cc	
R003C002	nc	nc	TTTTTFT	TTTTTFT	--F-F-		TTTTTFT	FFFFFFF	---TTT	
R003C003	nc	nc	TTTTTFF	TTTTTFF	---	FFF	TTTTTFF	FFFFFFF	cc	
R003C005	nc	nc	TFTFTTF	TFTFTTF	-F-FF-F		-F-FF-F	FFFFFFFT	cc	
R003C010	nc	nc	TTTTTFT	TTTTTFT	--F-F-		--F-F-	FFFFFFF	cc	
R003C015	nc	nc	TTTTTFF	TTTTTFF	---	FFF	---	FFF	FFFFFFFT	cc
R003C020	nc	nc	FFFFF-F-	FFFFF-F-	to		FFFFFTFT	FFTTTFF	cc	
R003C050	nc	nc	-F-F-FFF	-F-F-FFF	to		to	FFFFFFF	---TT-	
R003C100	nc	nc	-F-FFFF	-F-FFFF	to		to	FFFFFFF	---TTT	
R005C002	nc	nc	FFFFFTFF	FFFFFTFF	FFFFF-FF		FFFFFTFF	FFFFFFF	cc	
R010C002	nc	nc	TFFFFFFF	TFFFFFFF	-FFFFFFF		TFFFFFFF	FFTTTFF	cc	
R015C002	nc	nc	TFFFFFFF	TFFFFFFF	-FFFFFFF		TFFFFFFF	FFTTTFF	cc	
R020C002	nc	nc	TFTTTTTF	TFTTTTTF	-F-FFFFF		-F-FFFFF	FFFFFFFT	cc	
R050C002	nc	nc	---F-	---F-	to		to	FFFFFFF	cc	
R100C002	nc	nc	FFFFF-F-	FFFFF-F-	to		FFFFFTFF	FFTTTFF	cc	
Ring (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pass	Marcie Sara
none	nc	nc	-F-FF-FF	-F-FF-FF	-F-FF-FF		to	FFFTTFT	---F	
RwMutex (P/T)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pass	Marcie Sara
r0010w0010	nc	nc	TFTTTTTF	TFTTTTTF	-F-FFFFF		---FFF	FFFFFFF	cc	
r0010w0020	nc	nc	FFFFFTTT	FFFFFTTT	FFFFF-		FF-F-TTT	FFTTTFF	cc	
r0010w0050	nc	nc	TFTTTTTF	TFTTTTTF	-F-FFFFF		---FFF	FFFFFFF	cc	
r0010w0100	nc	nc	TTTTTTT	TTTTTTT	cc		cc	FFFFFFF	cc	
r0010w0500	nc	nc	TFTTTTFT	TFTTTTFT	-F-FF-F-		TFTTF-F-	FFTTTFF	cc	
r0010w1000	nc	nc	TFFFFFFF	TFFFFFFF	-FFFFFFF		TFFF-FFF	FFTTTFF	cc	
r0010w2000	nc	nc	TFTTTTFT	TFTTTTFT	-F-FF-F-		to	to	cc	
r0020w0010	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF		FF-FFFF	to	cc	
r0100w0010	nc	nc	TTTTTFF	TTTTTFF	---	FFF	---	F-	cc	cc
r0500w0010	nc	nc	TFFTTTFT	TFFTTTFT	-FFF-F-		-FFF-F-	cc	cc	
r1000w0010	nc	nc	TFTTTTTF	TFTTTTTF	-F-FFFFF		--F-	cc	cc	
r2000w0010	nc	nc	TFTTTTTF	TFTTTTTF	-F-FFFFF		cc	cc	cc	
SharedMemory (colored)										
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pass	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	nc
010000	nc	cc	nc	nc	nc	nc	nc	nc	nc
020000	nc	cc	nc	nc	nc	nc	nc	nc	nc
050000	nc	cc	nc	nc	nc	nc	nc	nc	nc
100000	nc	cc	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	FFFFFFF	cc	TFFFFFFT	TFFFFFFT	-FFFF-F-	--FF-F-	FFFTFFF	cc	
000010	FFFFFFF	cc	TTTTFTT	TTTTFTT	--F-F-	to	FFFFFFF	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	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
05	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
10	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
15	nc	mp	nc	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	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	TTTTTFT	TTTTTFT	---F-	TTTT--	FFFFFFF	cc	
05	nc	nc	TFFFFFF	TFFFFFF	-FFFFFF	TFF-TFT	FFFTFFF	---TTT	
10	nc	nc	to	to	to	to	FFFFFFF	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	nf
010	nf	nf	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf	nf	nf
050	nf	nf	nf	nf	nf	nf	nf	nf	nf
100	nf	nf	nf	nf	nf	nf	nf	nf	nf
200	nf	nf	nf	nf	nf	nf	nf	nf	nf
500	nf	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	nf
010	nf	nf	nf	nf	nf	nf	nf	nf	nf
020	nf	nf	nf	nf	nf	nf	nf	nf	nf
050	nf	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	FFFTFFF	cc		
005	cc	cc		cc	cc	FFFTFFF	cc		
010	cc	cc		cc	cc	FFFFFFF	cc		
020	cc	cc		cc	cc	FFFFFFF	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	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFTFFF	cc		
QuasiCertifProtocol (colored)									
instances	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	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
02	cc	cc	cc	cc	FFFFFFF	cc	
06	cc	cc	cc	cc	FFFFFFF	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	----T
32	cc	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	FFFFFFF	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	0	0
instances	0	1	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0	0
subtotal	0	4	0	0	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	1	1
instances	3	0	6	6	2	2	2	2	2	3
max reached	0	0	2	2	0	0	0	0	0	2
best	0	0	2	2	0	0	0	0	0	2
subtotal	4	0	11	11	3	3	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	1	1	0
instances	0	0	2	2	2	1	3	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	2	0	0
subtotal	0	0	3	3	3	2	6	0	0	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	0
instances	0	2	0	0	0	0		0	0	0
max reached	0	0	0	0	0	0		0	0	0
best	0	2	0	0	0	0		0	0	0
subtotal	0	5	0	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	0
instances	0	2	0	0	0	0		0	0	0
max reached	0	2	0	0	0	0		0	0	0
best	0	2	0	0	0	0		0	0	0
subtotal	0	7	0	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	1	0
instances	0	0	1	1	1	1		1	2	0
max reached	0	0	0	0	0	0		0	2	0
best	0	0	0	0	0	0		0	2	0
subtotal	0	0	2	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		1	0	1
instances	0	0	9	9	3	3		4	0	3
max reached	0	0	2	2	0	0		0	0	2
best	0	0	2	2	0	0		0	0	2
subtotal	0	0	14	14	4	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	1
instances	0	6	2	2	2	2		4	6	1
max reached	0	2	0	0	0	0		0	2	0
best	0	2	0	0	0	0		0	2	0
subtotal	0	11	3	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	1
instances	4	0	8	8	7	7		8	6	2
max reached	0	0	2	2	2	2		2	0	0
best	0	0	2	2	2	2		2	0	0
subtotal	5	0	13	13	12	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	0
instances	0	3	0	0	0	0		0	0	0
max reached	0	0	0	0	0	0		0	0	0
best	0	2	0	0	0	0		0	0	0
subtotal	0	6	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		0	1	0
instances	1	0	1	1	1	1		0	1	0
max reached	0	0	0	0	0	0		0	0	0
best	2	0	2	2	2	2		0	2	0
subtotal	4	0	4	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	1
instances	4	0	7	7	6	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	1	1
instances	0	0	6	6	2	2	2	2	2	2
max reached	0	0	2	2	0	0	0	0	0	0
best	0	0	2	2	0	0	0	0	0	0
subtotal	0	0	11	11	3	3	3	3	3	3
Philosophers (Colored)										
1st instance	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0	0	0
Philosophers (P/T)										
1st instance	1	0	1	1	1	1	1	1	1	1
instances	6	0	10	10	7	3	8	1	1	1
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	2	2	0	0	0	0	0	0
subtotal	7	0	13	13	8	4	9	2	2	2
PhilosophersDyn (Colored)										
1st instance	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0	0	0
PhilosophersDyn (P/T)										
1st instance	1	0	1	1	1	1	1	1	0	0
instances	1	0	2	2	2	2	1	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	2	2	2	2	0	0	0	0
subtotal	2	0	5	5	5	5	2	0	0	0
Planning (P/T)										
1st instance	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0	0	0
Railroad (P/T)										
1st instance	0	0	1	1	1	1	1	1	0	0
instances	0	0	3	3	2	2	2	2	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	2	2	0	0	0	0	0	0
subtotal	0	0	6	6	3	3	3	3	0	0
ResAllocation (P/T)										
1st instance	0	0	1	1	1	1	1	1	1	1
instances	0	0	15	15	10	12	15	3	3	3
max reached	0	0	2	2	0	2	2	0	0	0
best	0	0	2	2	0	2	2	0	0	0
subtotal	0	0	20	20	11	17	20	4	4	4
Ring (P/T)										
1st instance	0	0	1	1	1	0	1	1	1	1
instances	0	0	1	1	1	0	1	1	1	1
max reached	0	0	2	2	2	0	2	2	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	LoLa opt	LoLa pess	Marcie
170 points	170 points	120 points	120 points

For “Surprise” Models

1	2	2
		
Marcie 22 points	LoLA 12 points	LoLa opt 12 points

Global

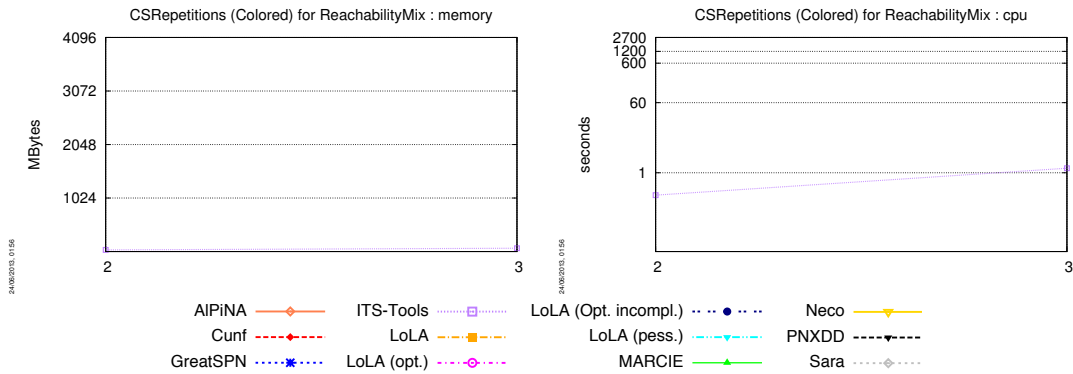
1	1	3
		
LoLA 194 points	LoLa opt 194 points	Marcie 164 points

12 The ReachabilityMix Examination

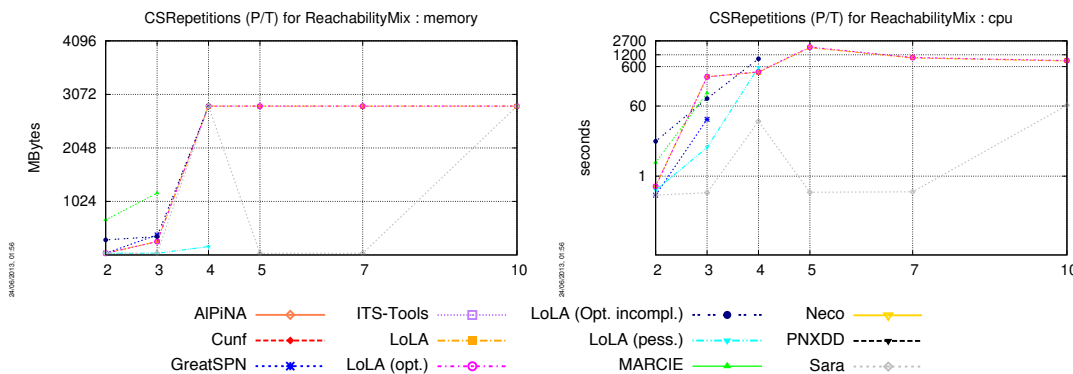
This examination deals with reachability properties dealing with all the previous type of atomic proposition. We first show a summary on the handling of models by the participating tools. Then, we present the computed outputs and the associated scores for this examination prior to a summary of relevant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

12.1 Handling of Models by Tools

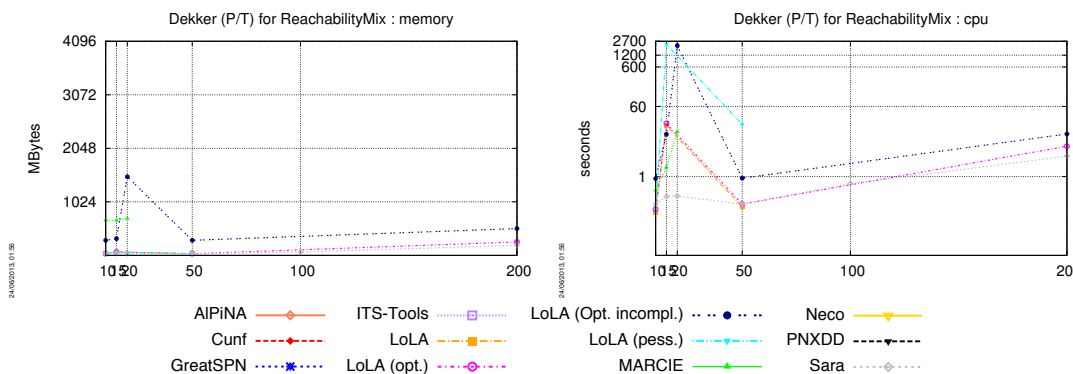
CSRepetitions (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



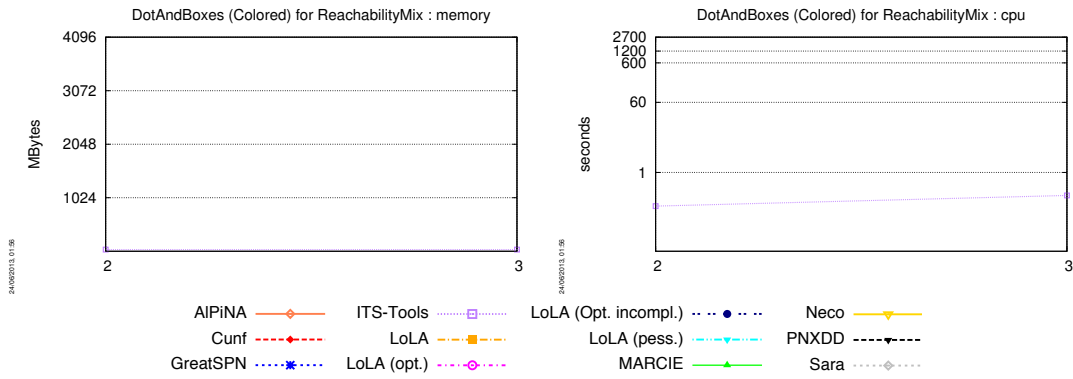
CSRepetitions (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



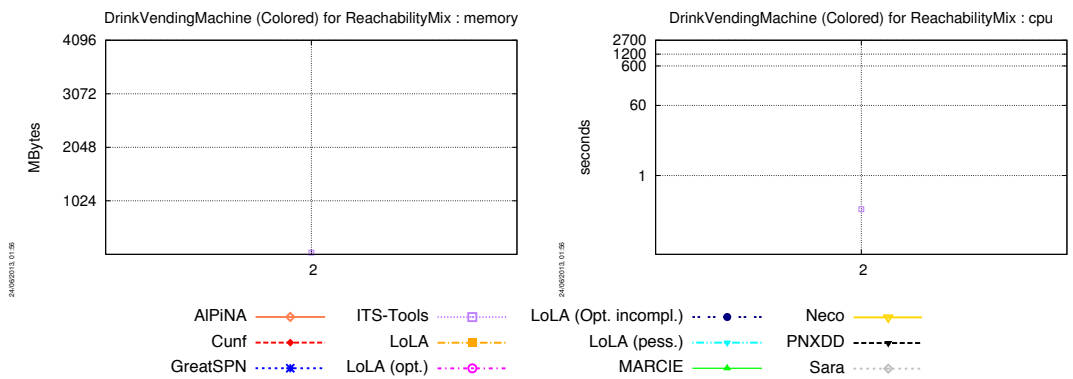
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



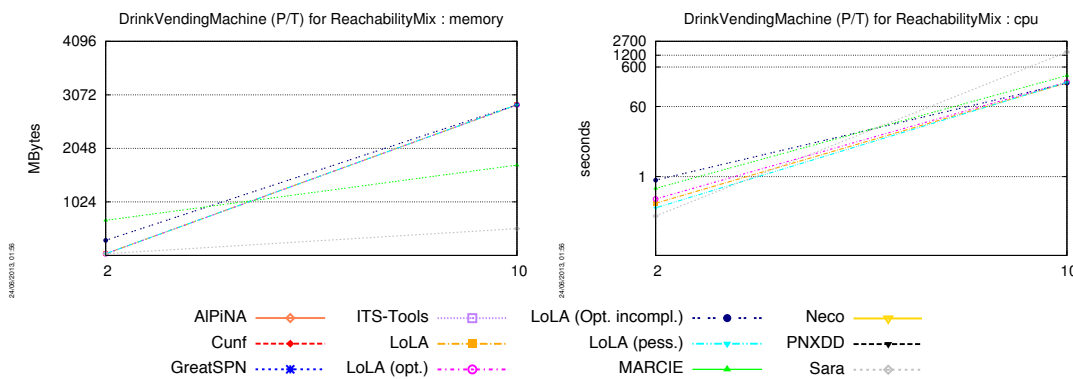
DotAndBoxes (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



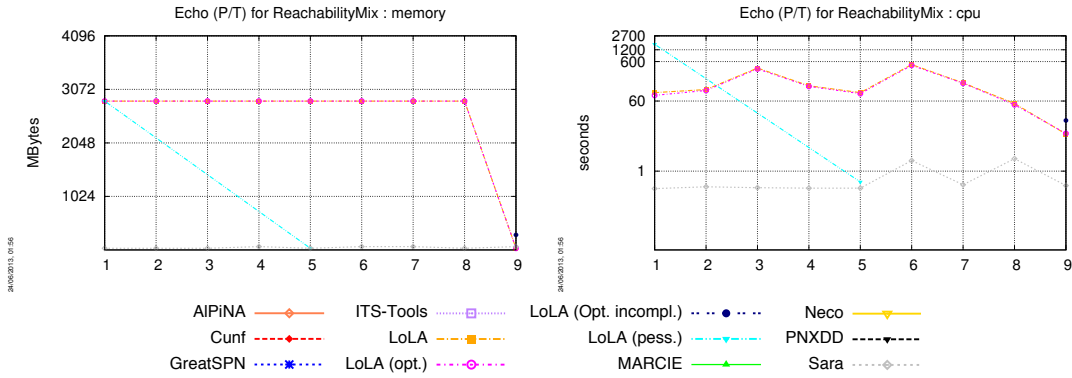
DrinkVendingMachine (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



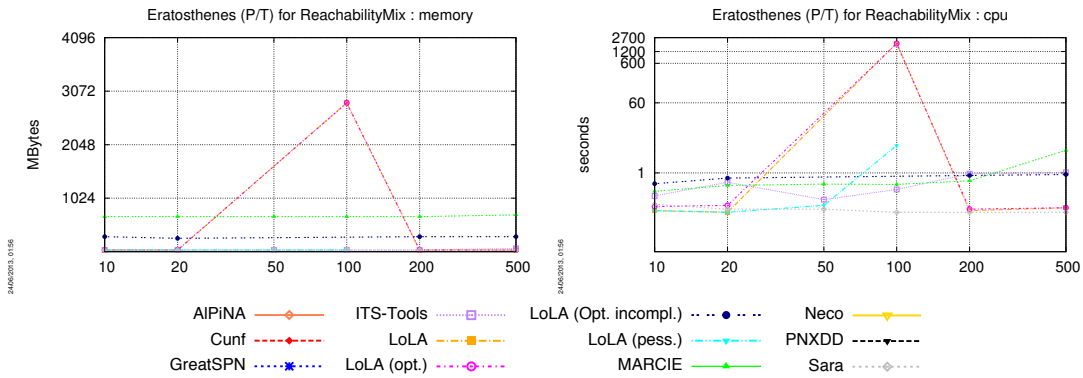
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



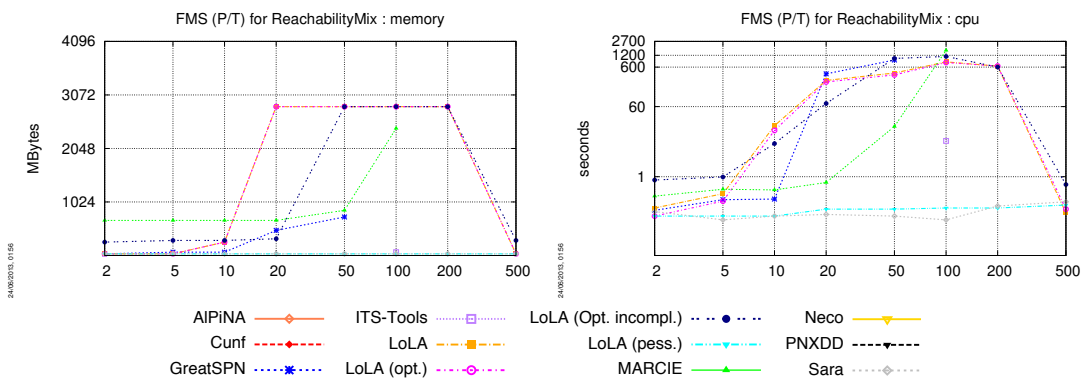
Echo (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

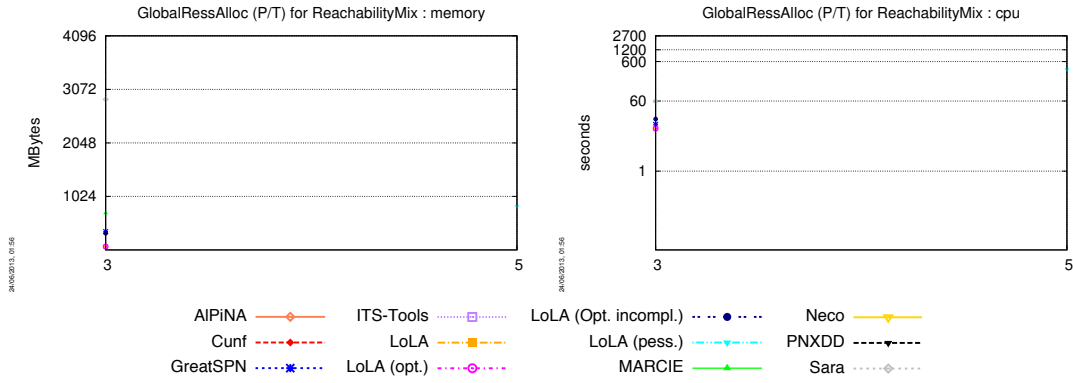


FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

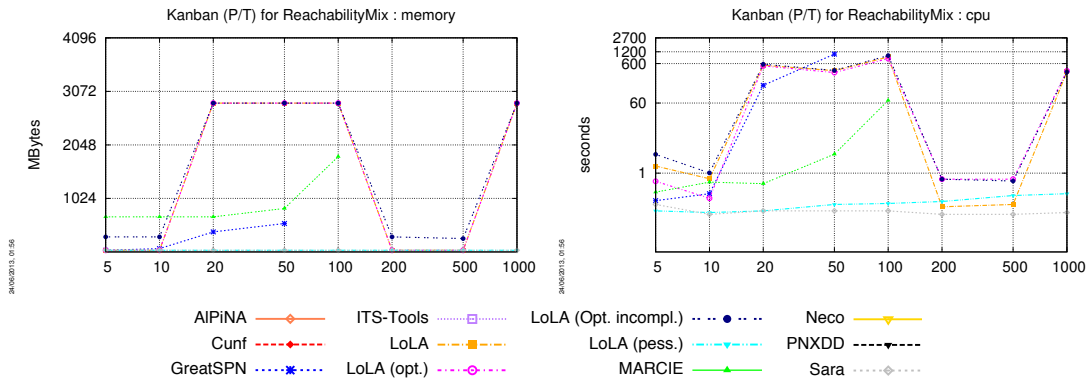


GlobalResAlloc (colored) No instance of this model could be computed for the **ReachabilityMix** examination.

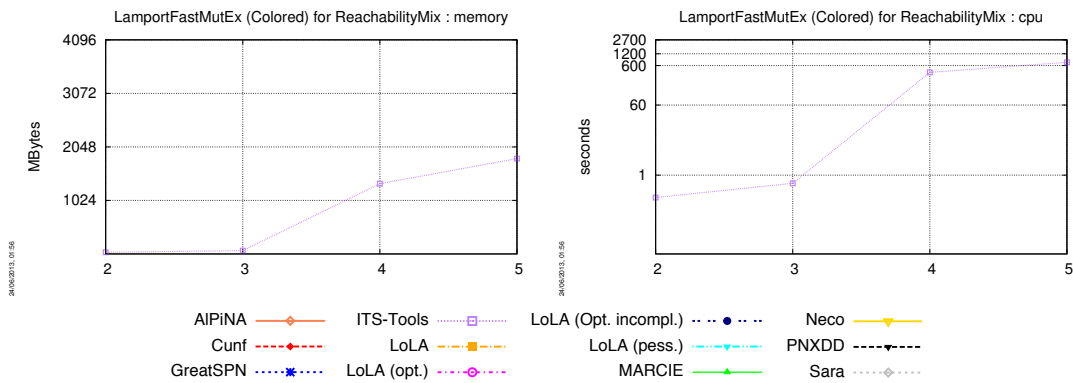
GlobalResAlloc (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



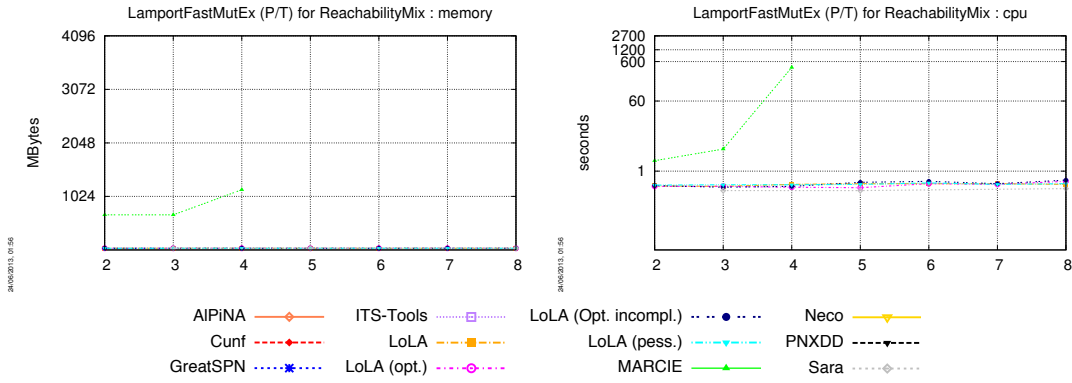
Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



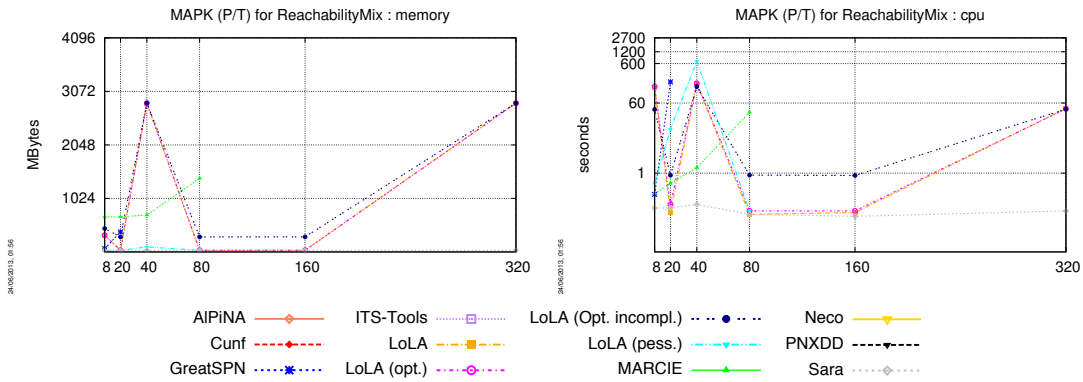
LamportFastMutEx (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



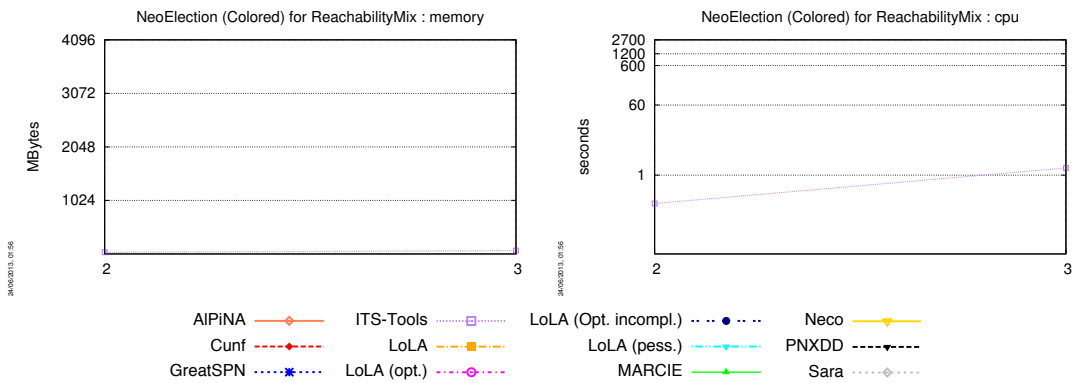
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



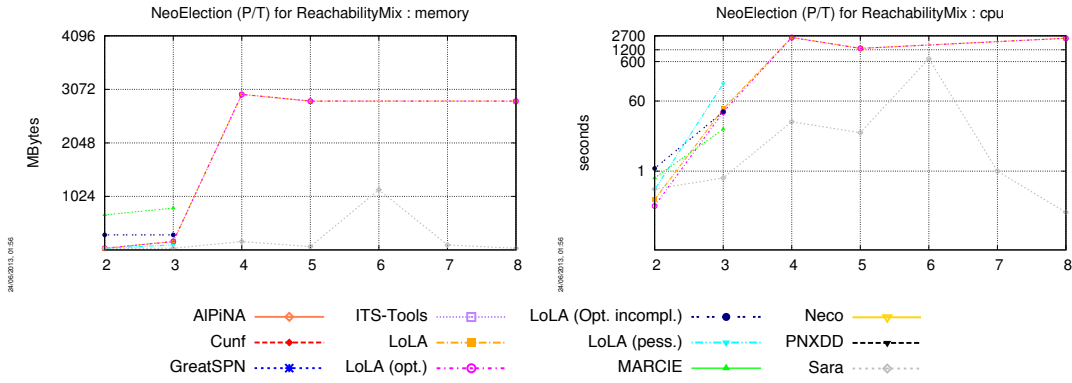
MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



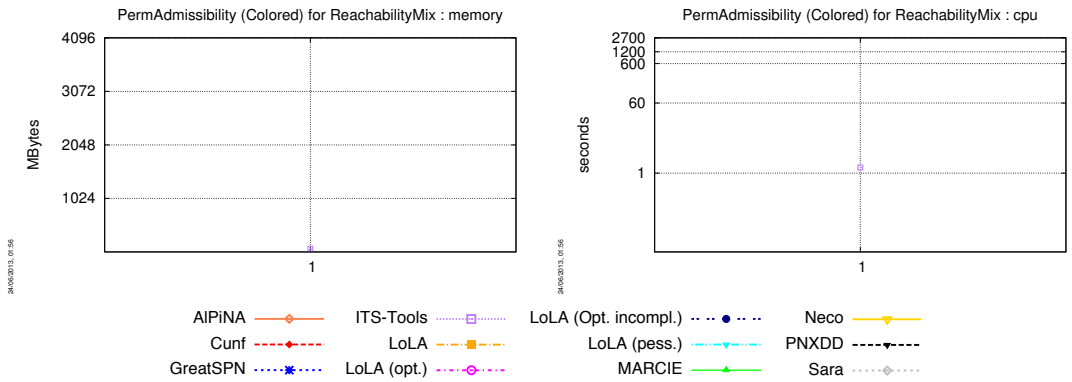
NeoElection (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



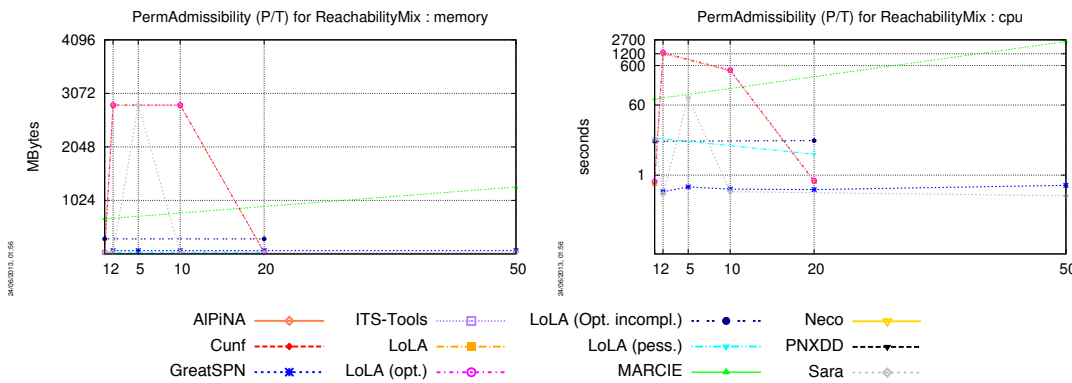
NeoElection (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



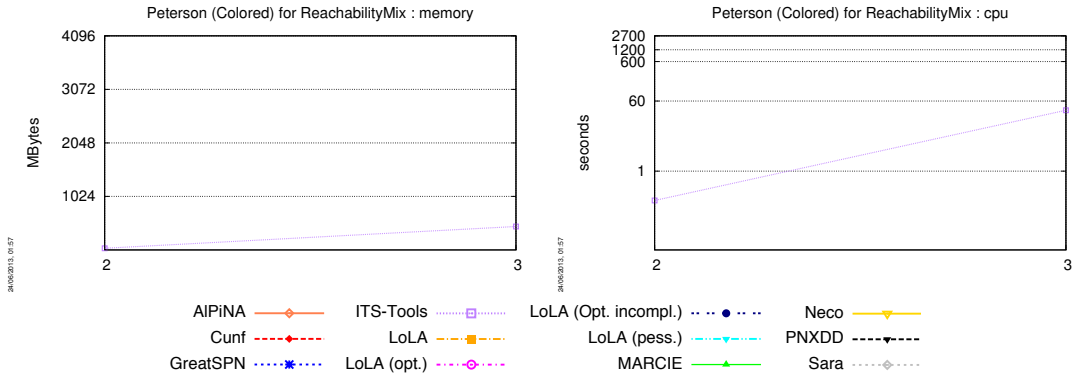
PermAdmissibility (colored) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



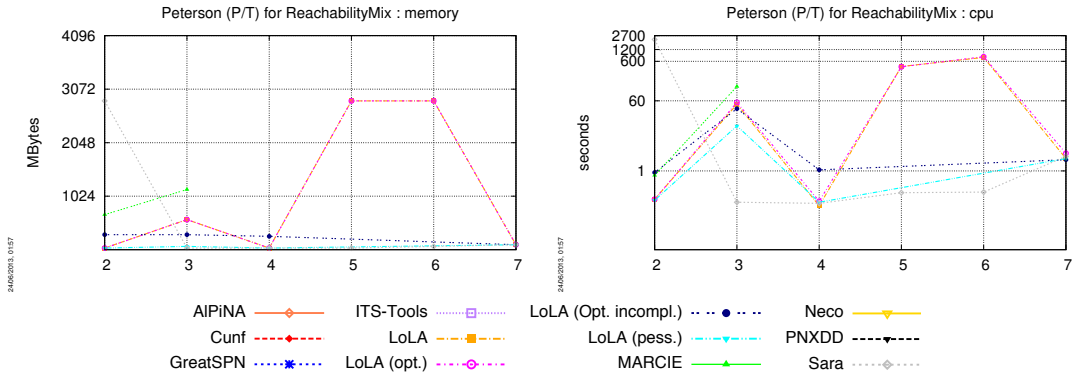
PermAdmissibility (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

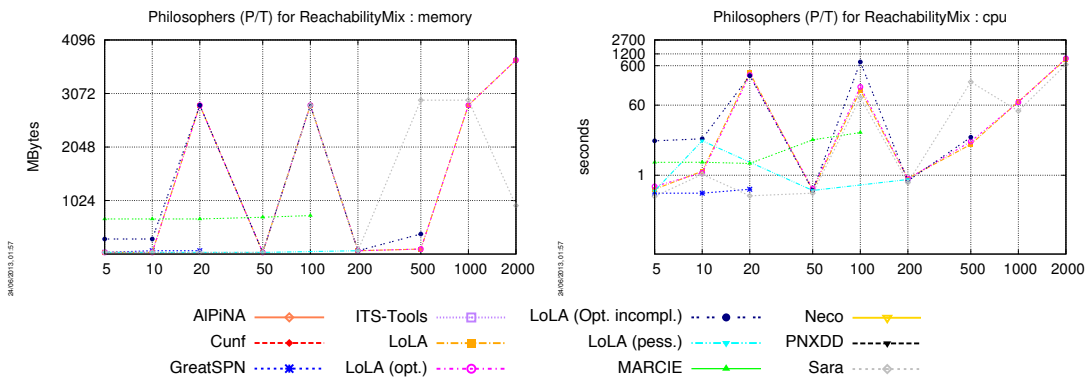


Peterson (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



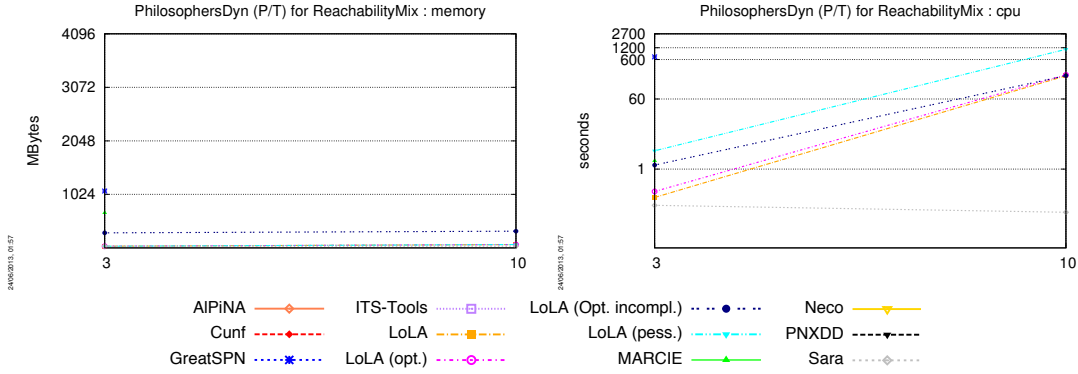
Philosophers (colored) No instance of this model could be computed for the **ReachabilityMix** examination.

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



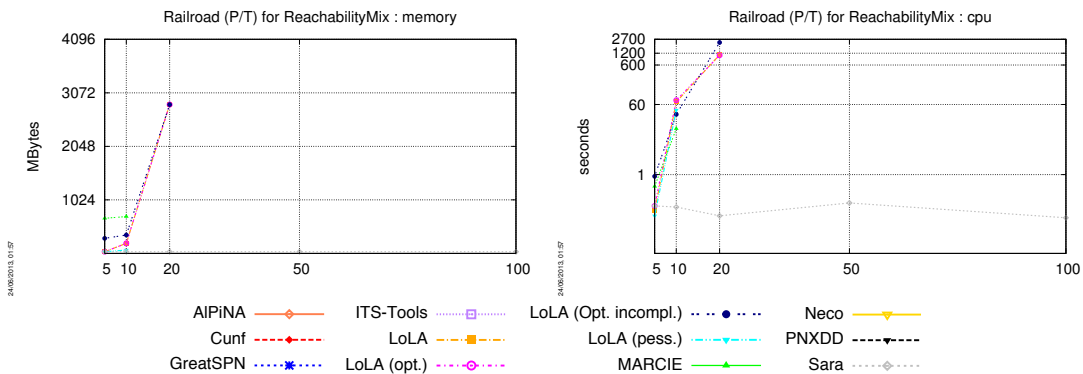
PhilosophersDyn (colored) No instance of this model could be computed for the **ReachabilityMix** examination.

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

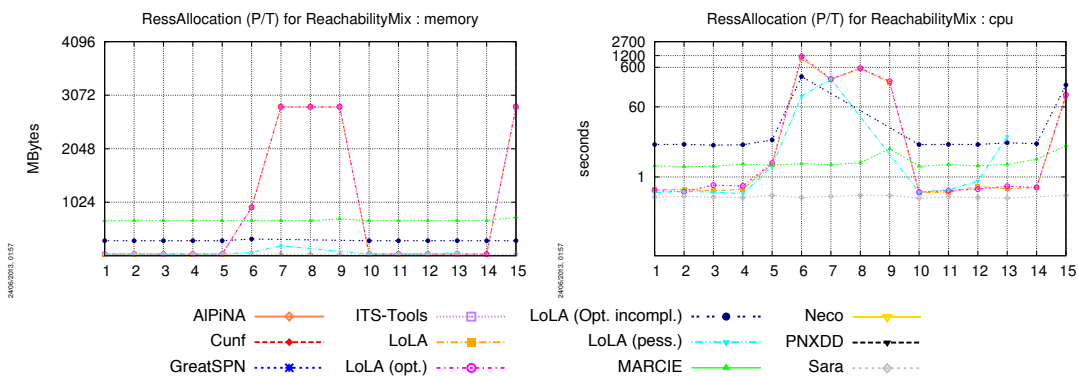


Planning (P/T) No instance of this model could be computed for the **ReachabilityMix** examination.

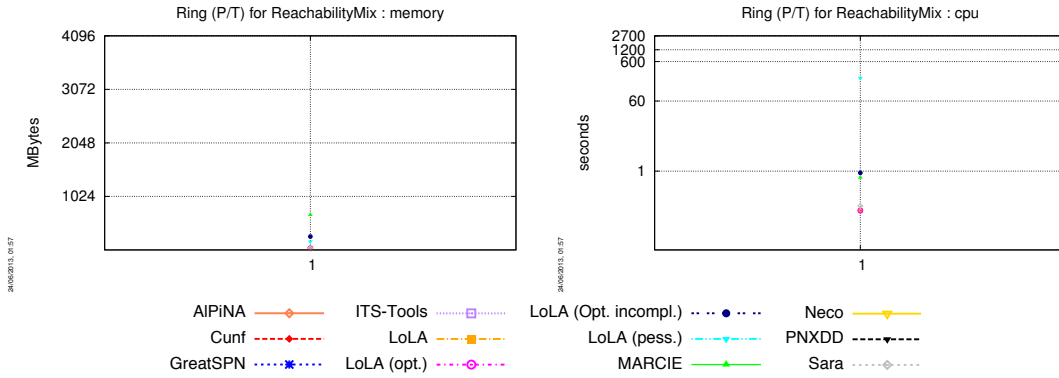
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



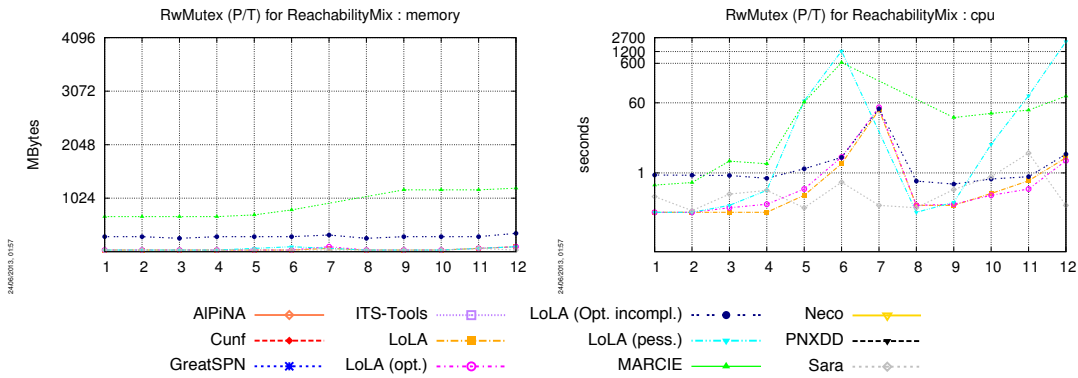
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

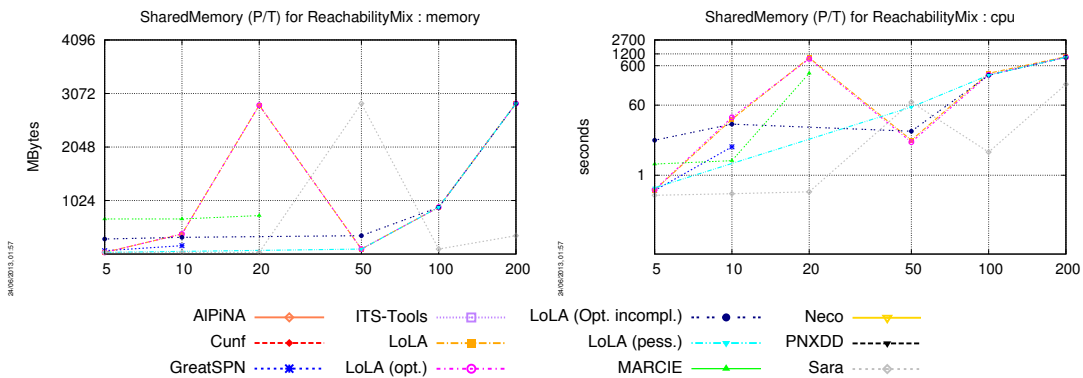


RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

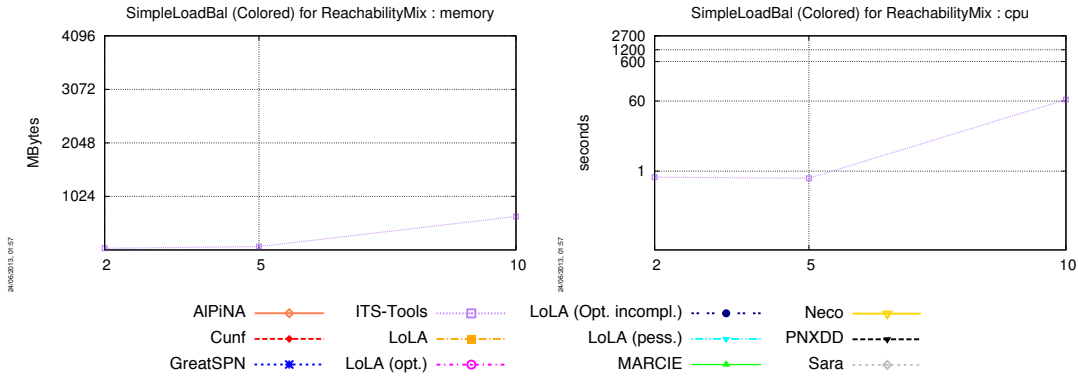


SharedMemory (colored) No instance of this model could be computed for the **ReachabilityMix** examination.

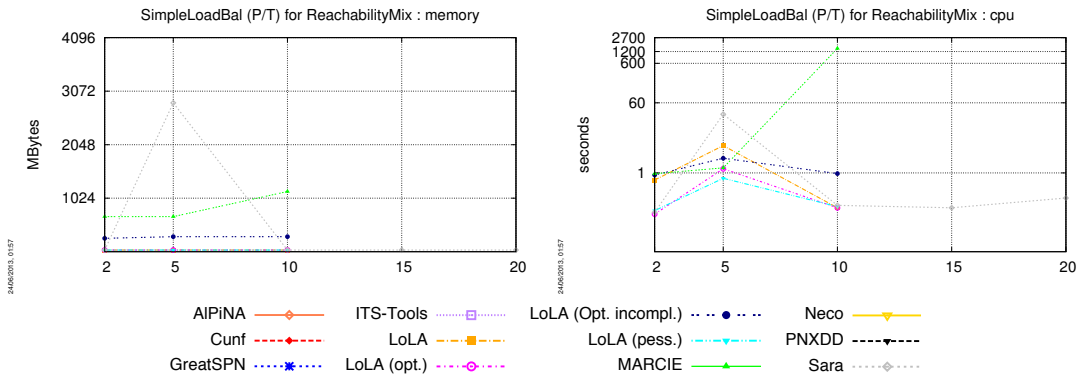
SharedMemory (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

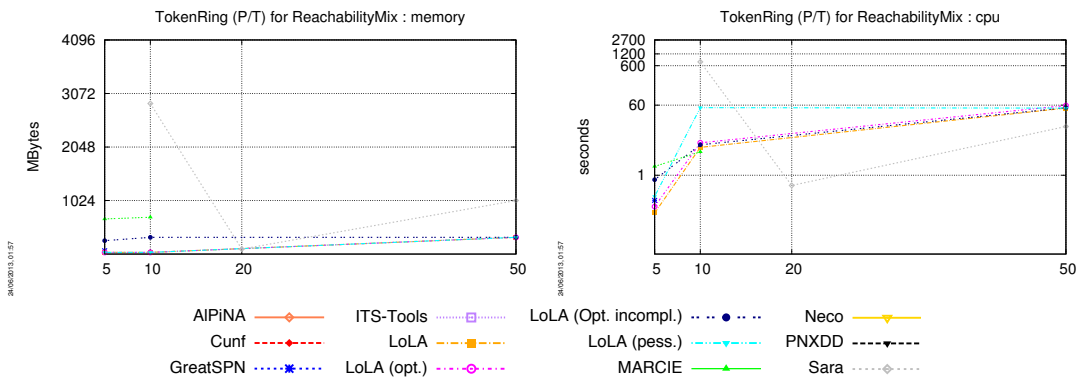


SimpleLoadBal (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

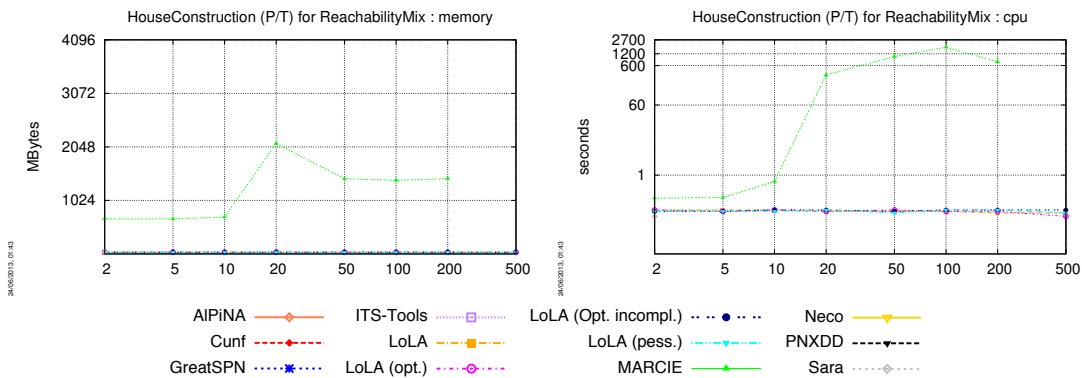


TokenRing (colored) No instance of this model could be computed for the **ReachabilityMix** examination.

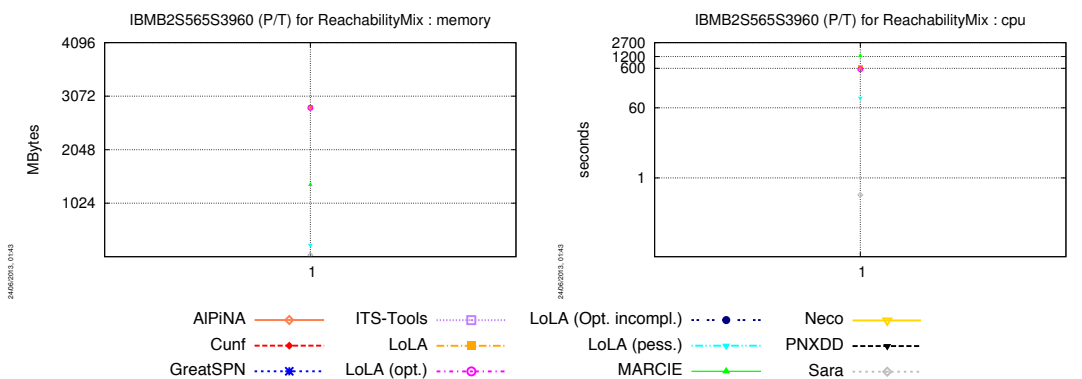
TokenRing (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

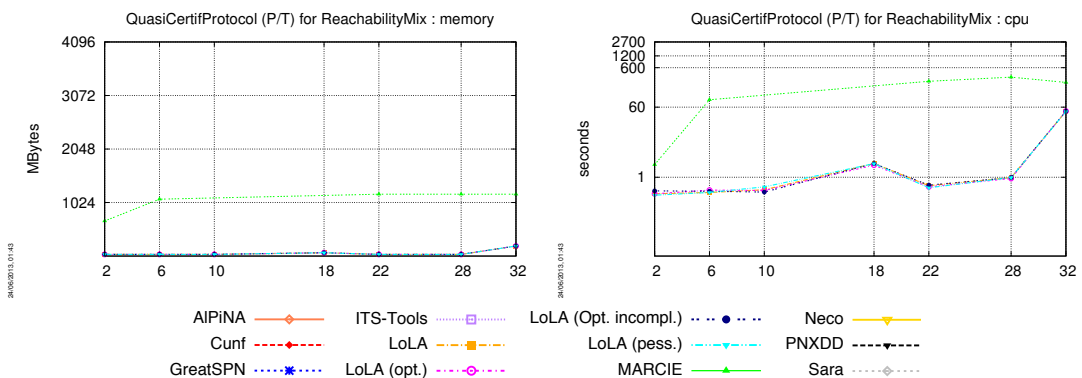


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

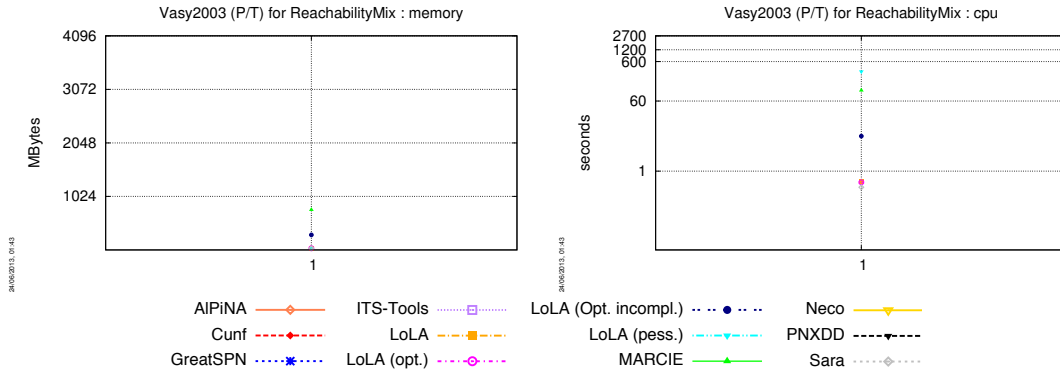


QuasiCertifProtocol (colored) No instance of this model could be computed for the **ReachabilityMix** examination.

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	FFFFFFF	nc	nc	nc	nc	nc	nc	nc		
03	nc	FTFTFFF	nc	nc	nc	nc	nc	nc	nc		
04	nc	mp	nc	nc	nc	nc	nc	nc	nc		
05	nc	mp	nc	nc	nc	nc	nc	nc	nc		
07	nc	mp	nc	nc	nc	nc	nc	nc	nc		
10	nc	mp	nc	nc	nc	nc	nc	nc	nc		
CSRepetitions (P/T)											
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara		
02	FFFFFFF	nc	TFTFFFF	TFTFFFF	-F-FFFF	-F-FF--	FFFFFFF	cc			
03	FTFTFFF	nc	TFTFTFT	TFTFTFT	-F-FF-F-	TFTFF--	FFFFFFF	---T-			
04	to	nc	FFFF-FF	FFFF-FF	FFFF-FF	---	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	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFTFFF	cc		
015	nc	nc	FFFFFFFT	FFFFFFFT	FFFFF-F-	FFFFFFFT	FFFFFFF	FFFTFFF	cc		
020	nc	nc	to	to	--FFFF	to	FFFTFFF	cc			
050	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	to	cc			
100	nc	nc	to	to	to	to	to	cc			
200	nc	nc	nc	FFFFFFF	FFFFFFF	to	to	cc			

DotAndBoxes (colored)											
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pess	Marcie	Sara
2	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc	nc
3	nc	FFFFTF	nc	nc	nc	nc	nc	nc	nc	nc	nc
4	nc	cc	nc	nc	nc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc	nc
DrinkVendingMachine (colored)											
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pess	Marcie	Sara
02	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	cc	nc	nc	nc	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	TFTFTFT	TFTFTFT	-F-FF-F-	TFTFF-F-	FFFFFFF	cc			
10	nc	nc	cc	cc	cc	cc	FFFFFFF	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-FFFF	-F-FFFF	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-FFFF	-F-FFFF	to	to	to	cc			
d04r03	nc	nc	-FFFFFFF	-FFFFFFF	to	to	to	---FF-			
d05r03	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	to	cc			
Eratosthenes (P/T)											
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pess	Marcie	Sara
010	nc	FFFFFFF	FFFFFFT	FFFFFFT	FFFFF-F-	FFFFFFT	FFFFFFF	FTTT			
020	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFF-F-	FFFFFFF	cc			
050	nc	FFFF	to	to	to	-F-FFFF	FTTTFF	cc			
100	nc	FFFFFFF	-F-FFFF	-F-FFFF	to	-F-FFFF	FFFFFFF	---FFF			
200	nc	FFFF	TFTTTTT	TFTTTTT	-F-FFFF	to	FFFFFFF	cc			
500	nc	FFFF	FFFFFFF	FFFFFFF	FFFFFFF	to	FFFFFFF	cc			
FMS (P/T)											
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pess	Marcie	Sara
002	FFFFFFF	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFF-F-	FFFFFFF	cc			
005	FFFFFFF	nc	TFTTTTT	TFTTTTT	-F-FFFF	cc	FFFFFFF	cc			
010	FFFFFFF	nc	TFTTTTT	TFTTTTT	-F-FFFF	---FFF	FFFFFFF	cc			
020	FFFFFFF	nc	TFTTTTT	TFTTTTT	-FFFFFFF	--F-F-	FFFFFFF	cc			
050	FFFFFFF	nc	FFFFF-F-	FFFFF-F-	FFFFF-F-	FFFFF-F-	FFFFFFF	cc			
100	mp	F	---FFF	---FFF	---FFF	---FFF	FFFFFFF	---T-			
200	to	nc	-F-FFFF	-F-FFFF	-F-FFFF	cc	to	cc			
500	to	nc	FFFFFFF	FFFFFFF	FFFFFFF	-F-FF-F-	to	FFFFF-T-			
GlobalResAlloc (colored)											
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pess	Marcie	Sara
03	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
06	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
09	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
11	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
GlobalResAlloc (P/T)											
Instances	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pess	Marcie	Sara
03	FFFFFFF	nc	TFTTTT	TFTTTT	-F-F-F-	to	FFFFFFF	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	FFFFFFF	nc	FFFFFFT	FFFFFFT	FFFFF-F-	FFF-F-	FFFFFFF	cc			
0010	FFFFFFF	nc	FFFFFFF	FFFFFFF	FFFFFFF	-F-FF--	FFFFFFF	cc			

0020	FFFFFFF	nc	-F-FFFF	-F-FFFF	-F-FFFF	---FFF	FFFFFFF	---FFF	
0050	FFFFFFF	nc	FFFFF-F-	FFFFF-F-	FFFFF-F-	FFFFF-F-	FFFFFFF	cc	
0100	mp	nc	-F-FF--	-F-FF--	-F-FF--	cc	FFFFFFF	cc	
0200	mp	nc	FFFFFFF	FFFFFFF	FFFFFFF	-F-FF-F-	to	---T-	
0500	mp	nc	FFFFFFF	FFFFFFF	FFFFFFF	-F-FF--	to	---T-	
1000	to	nc	-F-FFFF	-F-FFFF	-F-FFFF	--F-F-	to	---F-	
LamportFastMutex (colored)									
Instances	GreatSPN	ITS-Tools	LoLa	LoLa	opt LoLa	opt inc	LoLa	pess	Marcie Sara
2	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
4	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
5	nc	FTFTFFF	nc	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	nc	nc	nc	nc	nc	nc
8	nc	mp	nc	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	cc	FFFFFFF	cc
3	nc	nc	cc	cc	cc	cc	cc	FFFTFFF	cc
4	nc	nc	cc	cc	cc	cc	cc	FFFFFFF	cc
5	nc	nc	cc	cc	cc	cc	cc	to	cc
6	nc	nc	cc	cc	cc	cc	cc	to	cc
7	nc	nc	cc	cc	cc	cc	cc	to	cc
8	nc	nc	cc	cc	cc	cc	cc	to	cc
MAPK (P/T)									
Instances	GreatSPN	ITS-Tools	LoLa	LoLa	opt LoLa	opt inc	LoLa	pess	Marcie Sara
008	FFFFFFF	nc	TTTTTFF	TTTTTFF	---FFF	---FF	FFFFFFF	---T	
020	FFFFFFF	nc	FFFFFFF	FFFFFFF	FFFFFFF	-F-FFFF	FFFFFFF	cc	
040	to	nc	--FFFF	--FFFF	--FFFF	--FF-F-	FFFTFFF	---TT	
080	to	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	FFFTFFF	cc	
160	to	nc	FFFFFFF	FFFFFFF	FFFFFFF	to	to	cc	
320	to	nc	-FFFFFF	-FFFFFF	-FFFFFF	to	to	---F-	
NeoElection (colored)									
Instances	GreatSPN	ITS-Tools	LoLa	LoLa	opt LoLa	opt inc	LoLa	pess	Marcie Sara
2	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
4	nc	nc	nc	nc	nc	nc	nc	nc	nc
5	nc	nc	nc	nc	nc	nc	nc	nc	nc
6	nc	nc	nc	nc	nc	nc	nc	nc	nc
7	nc	nc	nc	nc	nc	nc	nc	nc	nc
8	nc	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	TTTTTFT	TTTTTFT	---F-	TTTTTFT	FFFFFFF	---TT	
3	nc	nc	TFTFTFT	TFTFTFT	-F-FF-F-	TFTFTFT	FFFTFFF	cc	
4	nc	nc	cc	cc	to	to	to	cc	
5	nc	nc	-F-FFFF	-F-FFFF	to	to	to	---TT	
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	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
02	nc	mp	nc	nc	nc	nc	nc	nc	nc
05	nc	mp	nc	nc	nc	nc	nc	nc	nc
10	nc	mp	nc	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	nc	nc	nc	nc	nc
50	nc	mp	nc	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	TFTFTTF	TFTFTTF	-F-FF-FF	TFTFTTF	FFFFFFF	---TF-	
02	?????FFF	nc	-F-FF-F-	-F-FF-F-	to	to	to	cc	
05	FFFTTTF	nc	to	to	to	to	to	---F-	
10	FFFTTTF	nc	-F-FFFF	-F-FFFF	to	to	to	cc	
20	TTTTTTF	nc	FFFFFFF	FFFFFFF	FFFFFFF	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	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
3	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc
4	nc	mp	nc	nc	nc	nc	nc	nc	nc
5	nc	mp	nc	nc	nc	nc	nc	nc	nc
6	nc	mp	nc	nc	nc	nc	nc	nc	nc
7	nc	mp	nc	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	TFTTTTF	TFTTTTF	-F--FF	TFTT-F-	FFFFFFF	-FFF-T-	
3	nc	nc	FFFFFFT	FFFFFFT	FFFFF-F-	-F-F-TFT	FFFFFFF	cc	
4	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	FFFFFFF	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	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	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt inc	LoLa	pess	Marcie Sara
000005	FFFFFFF	nf	TFTTTTT	TFTTTTT	-F-FFFF	TFTTTTT	FFFFFFF	cc	
000010	FTFTFFF	nf	FTFTTFT	FTFTTFT	FF-F-F-	FTFTTFT	FFFFFFF	TF-FF--	
000020	FTFTTTF	nf	FFFFFFF-	FFFFFFF-	FFFFFFF-	to	FFFFFFF	cc	
000050	to	nf	cc	cc	cc	cc	FFFFFFF	cc	
000100	mp	nf	---F-	---F-	---F-	to	FFFFFFF	cc	
000200	mp	nf	cc	cc	cc	cc	to	cc	
000500	to	nf	---FFF	---FFF	---FFF	to	to	---F-	
001000	mp	nf	-F-FFFF	-F-FFFF	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	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	GreatSPN	ITS-Tools	LoLA	LoLa	opt LoLa	opt inc	LoLa	pess	Marcie Sara
03	FFFFFFF	nc	TFTTTTT	TFTTTTT	-F-F-FFF	TFTTTTT	FFFFFFF	cc	

10	mp	nc	TFTFTFT	TFTFTFT	-F-FF-F-	TFTFTFT	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	nf	
Railroad (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
005	nc	nc	TFTTTTT	TFTTTTT	-F-FFFF	TFTTTTT	TTTTTTT	---TT-	
010	nc	nc	TFTTTTT	TFTTTTT	-F-F-FFF	cc	TTTTTTT	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	
ResAllocation (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
R002C002	nc	nc	TFTTTTT	TFTTTTT	-FF-FF	TFTTTT	TTTTTTT	cc	
R003C002	nc	nc	TFTTTTT	TFTTTTT	-F-FFFF	TFTTTTT	TTTTTTT	---T-	
R003C003	nc	nc	TFTFTFT	TFTFTFT	-F-FF-F-	TFTFF-F-	TTTTTTT	cc	
R003C005	nc	nc	TFTFTFT	TFTFTFT	-F-FF-F-	TF-FTFT	TTTTTTT	cc	
R003C010	nc	nc	TTTTTFT	TTTTTFT	---F-	---TFT	TTTTTTT	---TFT	
R003C015	nc	nc	TFTFTFT	TFTFTFT	-F-FF-F-	-F-FF-F-	TTTTTTT	cc	
R003C020	nc	nc	FFFFF-FF	FFFFF-FF	to	FFFFF-F	TTTTTTT	cc	
R003C050	nc	nc	--FFFF	--FFFF	to	to	TTTTTTT	---T-	
R003C100	nc	nc	FFFFF-F-	FFFFF-F-	to	to	TTTTTTT	cc	
R005C002	nc	nc	TTTTTTT	TTTTTTT	TTTTTTT	TTTTTTT	TTTTTTT	cc	
R010C002	nc	nc	TTTTTTT	TTTTTTT	TTTTTTT	TFTTTT	TTTTTTT	cc	
R015C002	nc	nc	TTTTTTT	TTTTTTT	TTTTTTT	TTTTTTT	TTTTTTT	cc	
R020C002	nc	nc	TTTTTTT	TTTTTTT	TTTTTTT	TTTTTTT	TTTTTTT	cc	
R050C002	nc	nc	TFTTTTT	TFTTTTT	-F-F-FFF	to	TTTTTTT	to	
R100C002	nc	nc	TTTTTTT	TTTTTTT	TTTTTTT	to	TTTTTTT	---T-	
Ring (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
none	nc	nc	TTTTTTT	TTTTTTT	TTTTTTT	TTTTTTT	TTTTTTT	TTTTTTT	---FFF
RwMutex (P/T)									
Instances	GreatSPN	ITS-Tools	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
r0010w0010	nc	nc	TFTFTFT	TFTFTFT	-F-FF-F-	TFTFF-F-	TTTTTTT	cc	
r0010w0020	nc	nc	TFTFTFT	TFTFTFT	-F-F-F-	TFTF-TFT	TTTTTTT	---T-	
r0010w0050	nc	nc	TTTTTFT	TTTTTFT	---F-	cc	TTTTTTT	---TTT	
r0010w0100	nc	nc	TTTTTTT	TTTTTTT	TTTTTTT	cc	TTTTTTT	---TTT	
r0010w0500	nc	nc	TFTTTTT	TFTTTTT	-F-FFFF	TFTF-FFF	TTTTTTT	cc	
r0010w1000	nc	nc	TFTFTFT	TFTFTFT	-F-FF-F-	TFTF-TFT	TTTTTTT	cc	
r0010w2000	nc	nc	TTTTTFT	TTTTTFT	--F-F-	to	to	cc	
r0020w0010	nc	nc	TTTTTTT	TTTTTTT	TTTTTTT	cc	to	cc	
r0100w0010	nc	nc	TTTTTTT	TTTTTTT	TTTTTTT	-F-F--	cc	cc	
r0500w0010	nc	nc	TFTTTTT	TFTTTTT	-F-FFFF	-F-FFFF	cc	cc	
r1000w0010	nc	nc	TTTTTTT	TTTTTTT	TTTTTTT	TTTTTTT	cc	---T-	
r2000w0010	nc	nc	TTTTTTT	TTTTTTT	TTTTTTT	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	nc	
100000	nc	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	FFFFFFF	nc	FFFFFFF	FFFFFFF	FFFFF-FF	FF--F-	FFTTFFF	cc		
000010	FFFFFFF	nc	FFFFFFF	FFFFFFF	FFFFF-FF	to	FFTTFFF	---	T	
000020	mp	nc	FF-FF-F-	FF-FF-F-	to	to	FFFFFFF	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	FFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
05	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	FFFFFFF	nc	nc	nc	nc	nc	nc	nc	nc
15	nc	mp	nc	nc	nc	nc	nc	nc	nc	nc
20	nc	mp	nc	nc	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	TTTTFFF	TTTTFFF	--F-FFF	TTTTTFT	FFFFFFF	cc		
05	nc	nc	FTFTTFT	FTFTTFT	FF-F-F-	FTFT-F-	FFFFFFF	---	T-	
10	nc	nc	FFFFFFF	FFFFFFF	FFFFFFF	cc	FFFFFFF	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	nc	nc
010	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
020	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
050	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
100	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
200	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
500	nc	nc	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	FTFFFFFF	nc	TFTFTFT	TFTFTFT	-F-F-F-	-F-F-F-	FTFTFTF	to		
010	to	nc	TFTFTFT	TFTFTFT	-F-FF-F-	-F-F-F-	FTFTFTF	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	cc	FFFFFFFT	cc		
005	cc	cc	cc	cc	cc	FFFFFFF	cc		
010	cc	cc	cc	cc	cc	FFFFFFF	cc		
020	cc	cc	cc	cc	cc	FFFFFFF	cc		
050	cc	cc	cc	cc	cc	cc	cc		
100	cc	cc	cc	cc	cc	cc	cc		
200	cc	cc	cc	cc	cc	cc	cc		
500	cc	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--	FFFFFFF	cc			
QuasiCertifProtocol (colored)									
instances	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	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
02	cc	cc	cc	cc	FFFFFFF	cc	
06	cc	cc	cc	cc	FFFFFFF	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	FFFFFFF	FFFFFFF	FFFFFFF	FFF-FFF	FFFFFFF	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	0
instances	0	2	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0
subtotal	0	5	0	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	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	1	0
instances	0	0	3	4	5	3	3	3	0
max reached	0	0	0	2	2	0	0	0	0
best	0	0	0	2	2	0	0	0	0
subtotal	0	0	4	9	10	4	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	0
instances	0	2	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0
subtotal	0	5	0	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	0
instances	0	1	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0
subtotal	0	4	0	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	1	0
instances	0	0	1	1	1	1	1	2	0
max reached	0	0	0	0	0	0	0	2	0
best	0	0	0	0	0	0	0	2	0
subtotal	0	0	2	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	1	0	1
instances	0	0	9	9	1	1	2	0	3
max reached	0	0	2	2	2	2	0	0	0
best	0	0	2	2	2	2	0	0	0
subtotal	0	0	14	14	6	3	0	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	1
instances	0	6	5	5	4	4	4	6	2
max reached	0	2	2	2	2	0	2	2	0
best	0	2	2	2	2	0	2	2	0
subtotal	0	11	10	10	9	5	11	3	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	1
instances	5	1	8	8	8	6	6	6	2
max reached	0	0	2	2	2	2	0	2	2
best	0	0	2	2	2	2	0	2	2
subtotal	6	2	13	13	13	11	7	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	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
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	1	0
instances	1	0	1	1	1	1	1	1	0
max reached	0	0	0	0	0	2	0	0	0
best	0	0	0	0	0	2	0	0	0
subtotal	2	0	2	2	2	6	2	0	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	1
instances	4	0	8	8	8	7	5	4	4
max reached	0	0	2	2	2	2	0	2	2
best	0	0	2	2	2	2	0	2	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	0
instances	0	4	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0
subtotal	0	7	0	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	0
instances	0	0	0	0	0	0	3	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	2	0	0
subtotal	0	0	0	0	0	0	6	0	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	1
instances	2	0	6	6	6	4	4	3	3
max reached	0	0	2	2	2	0	0	2	2
best	0	0	2	2	2	0	0	2	2
subtotal	3	0	11	11	11	5	5	8	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	0
instances	0	2	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0
subtotal	0	5	0	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	1
instances	0	0	4	4	2	2	2	2	2
max reached	0	0	2	2	0	0	0	0	0
best	0	0	2	2	0	0	0	0	0
subtotal	0	0	9	9	3	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	0
instances	0	1	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0
subtotal	0	4	0	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	1
instances	5	0	4	4	2	2	1	2	2
max reached	2	0	0	0	0	0	0	0	0
best	2	0	0	0	0	0	0	0	0
subtotal	10	0	5	5	3	3	2	3	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	0
instances	0	2	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0
best	0	2	0	0	0	0	0	0	0
subtotal	0	5	0	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	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
ResAllocation (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 189 points	LoLA 184 points	LoLa opt inc 154 points

For “Surprise” Models

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

Global

1	2	3	3
			
LoLa opt 213 points	LoLA 208 points	Marcie 166 points	LoLa opt inc 166 points

Part IV

CTL-based Analysis

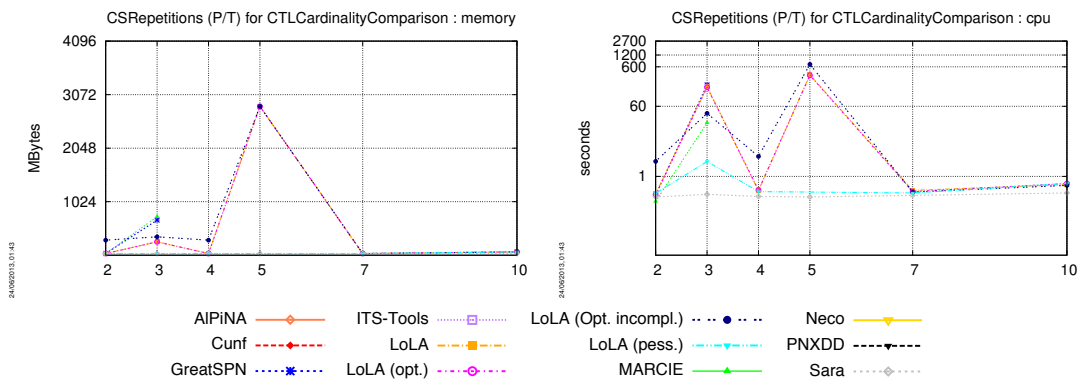
13 The CTLCardinalityComparison Examination

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.

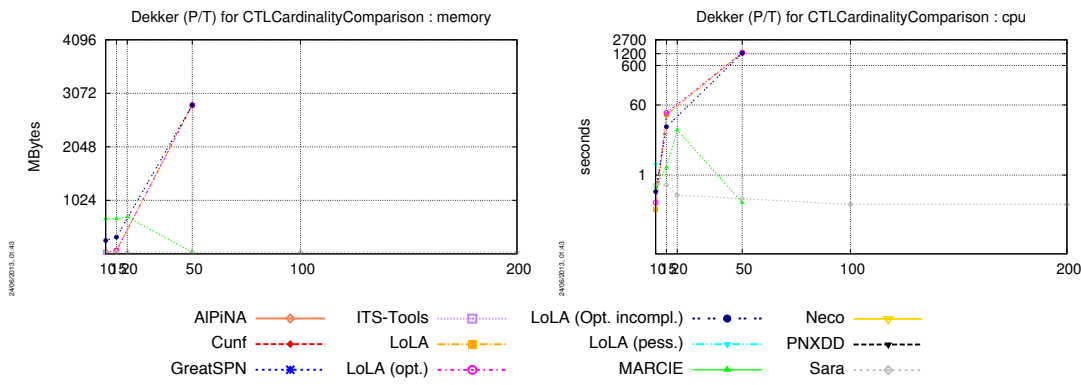
13.1 Handling of Models by Tools

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).



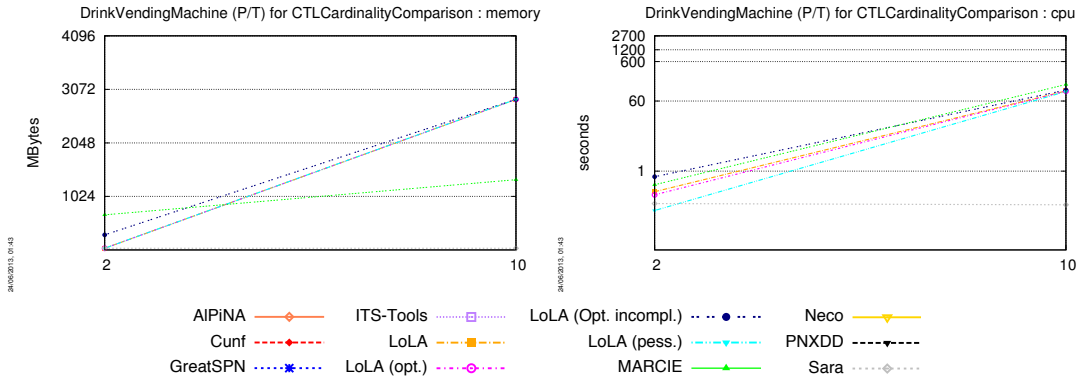
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



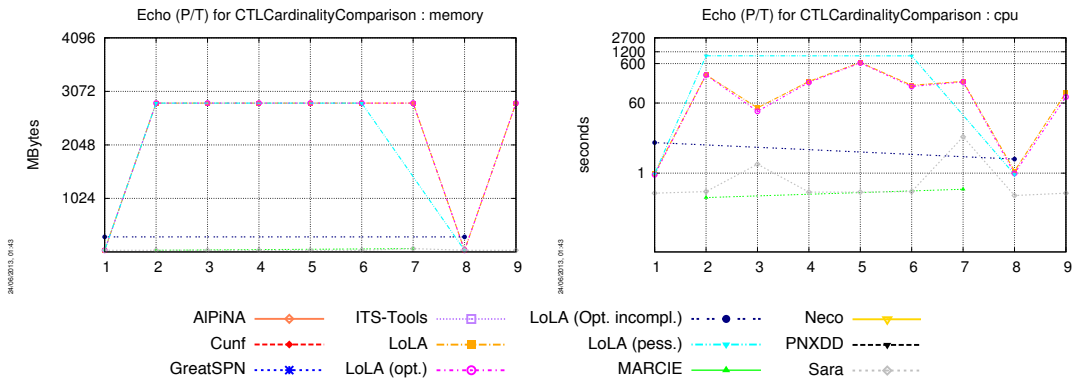
DotAndBoxes (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

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

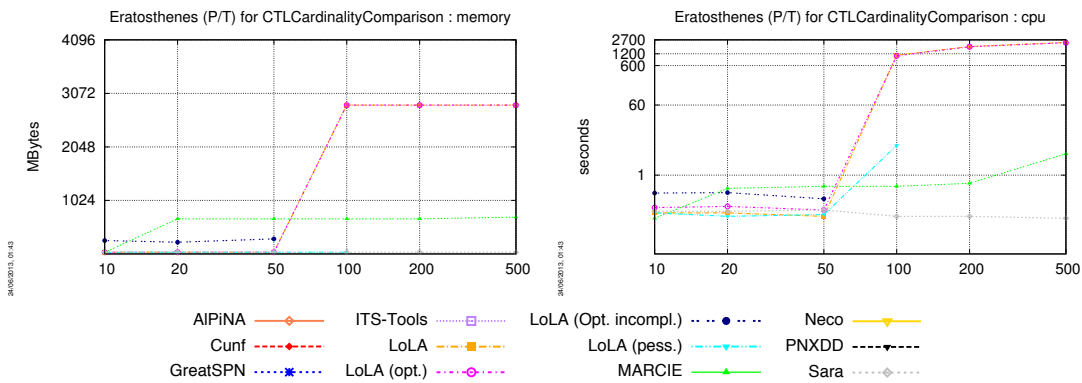
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



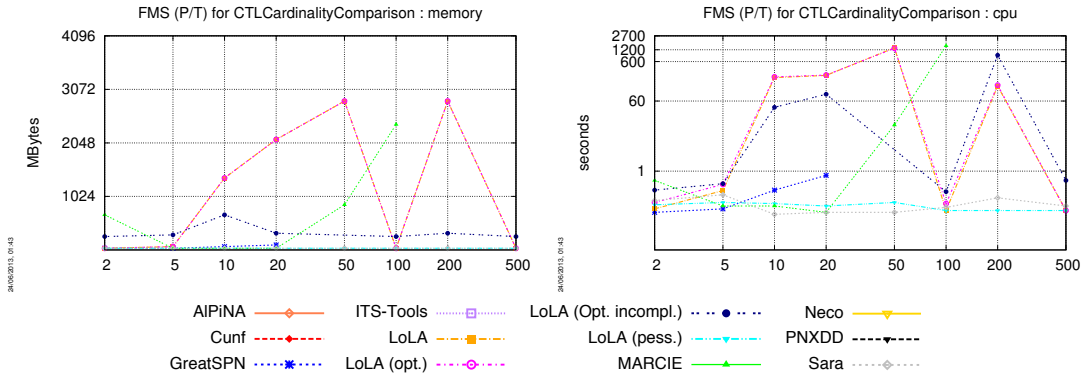
Echo (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

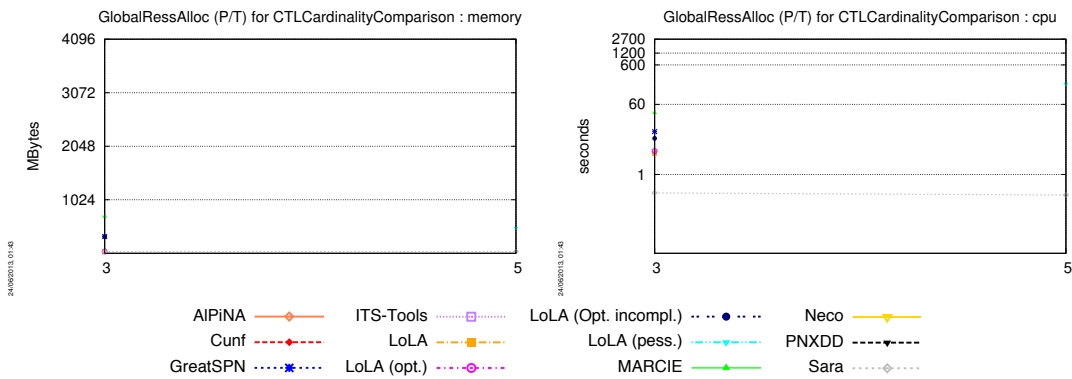


FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

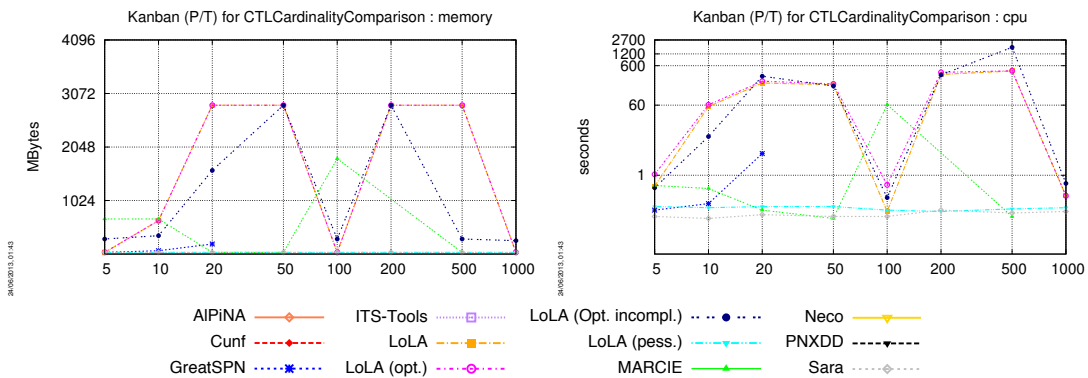


GlobalResAlloc (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

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

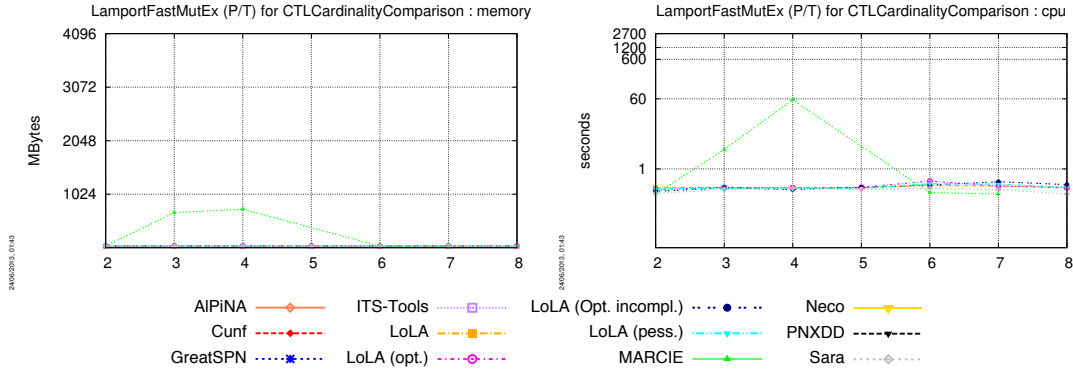


Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

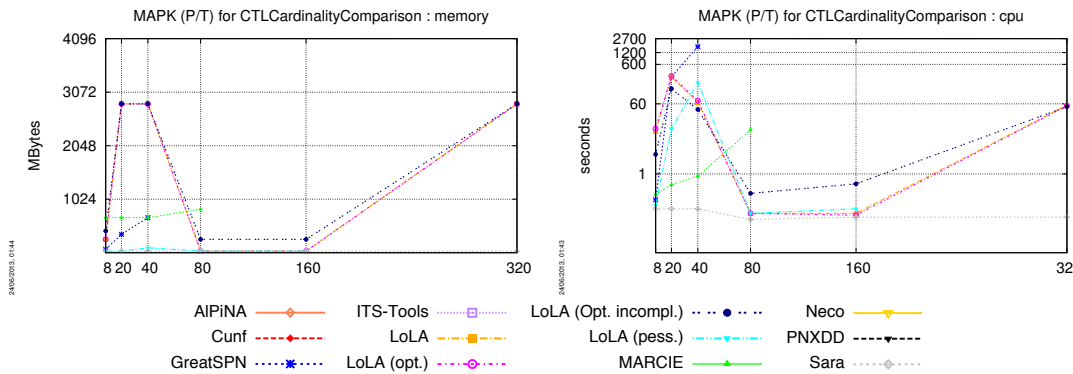


LamportFastMutEx (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

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

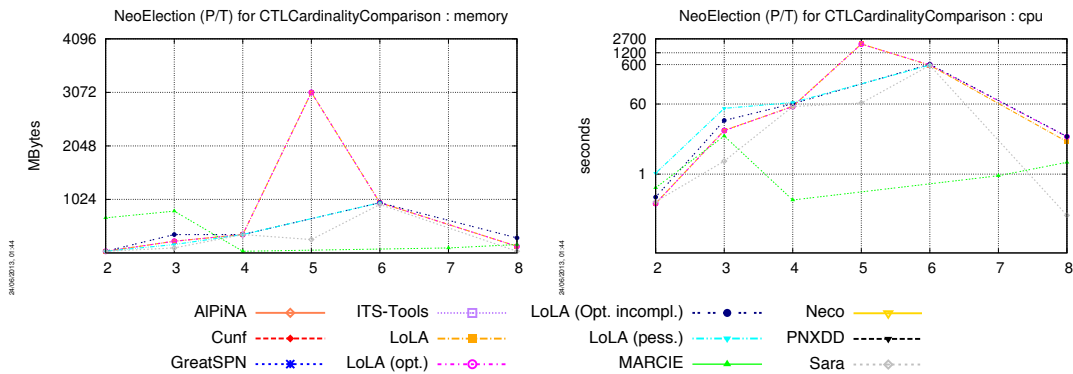


MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



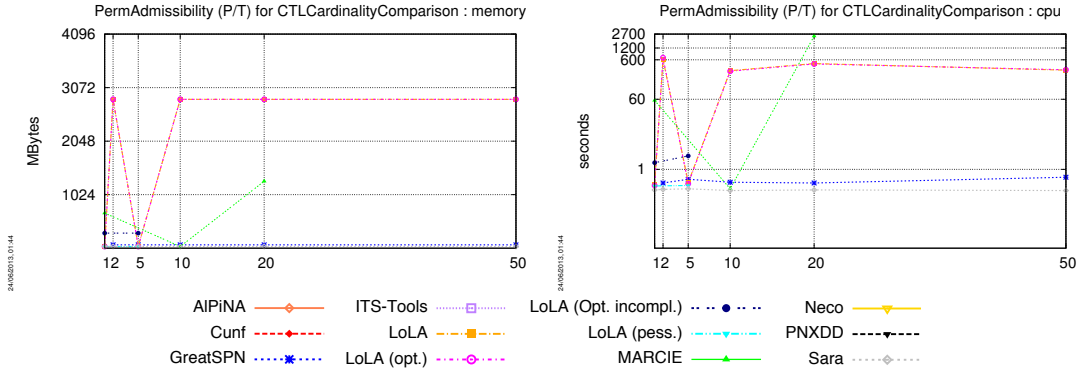
NeoElection (colored) No instance of this model could be computed for the **CTLCardinality-Comparison** examination.

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



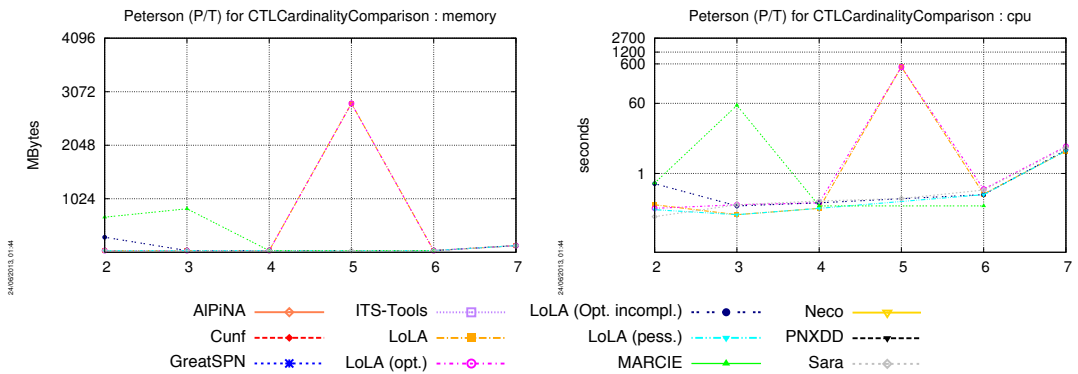
PermAdmissibility (colored) No instance of this model could be computed for the **CTLCardinality-Comparison** examination.

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



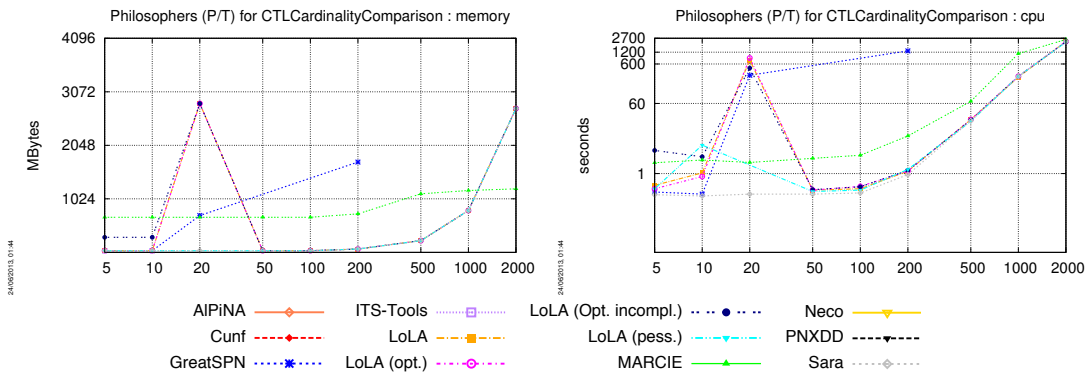
Peterson (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

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



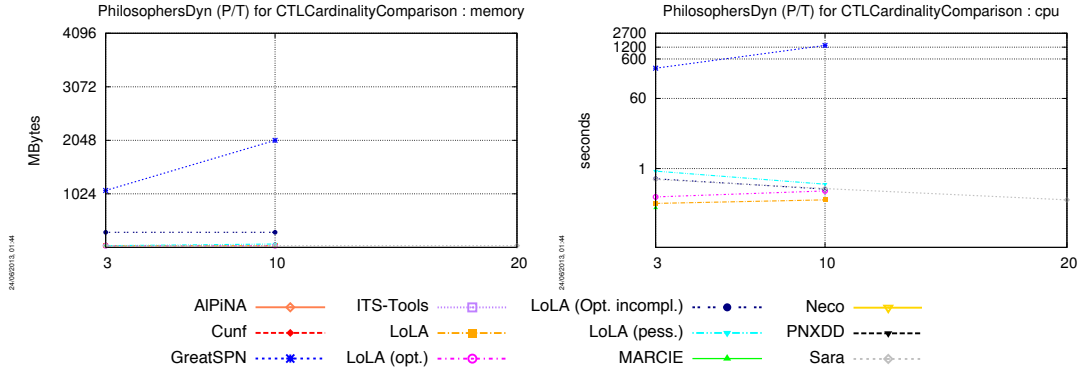
Philosophers (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

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



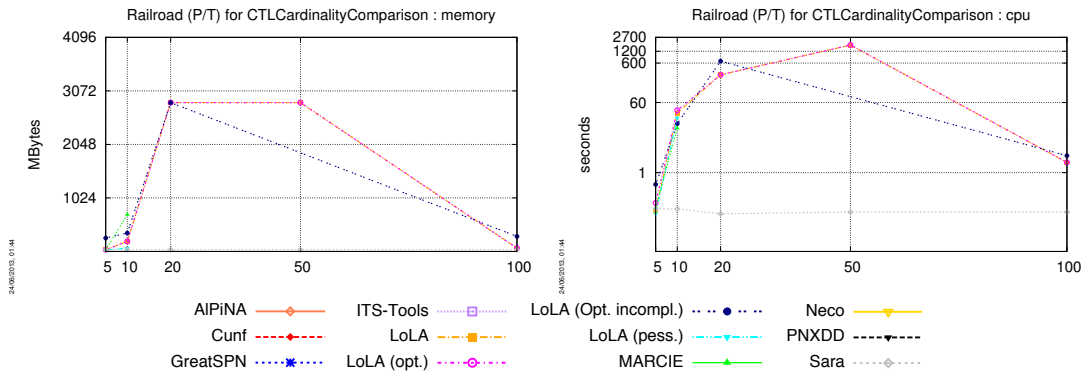
PhilosophersDyn (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

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

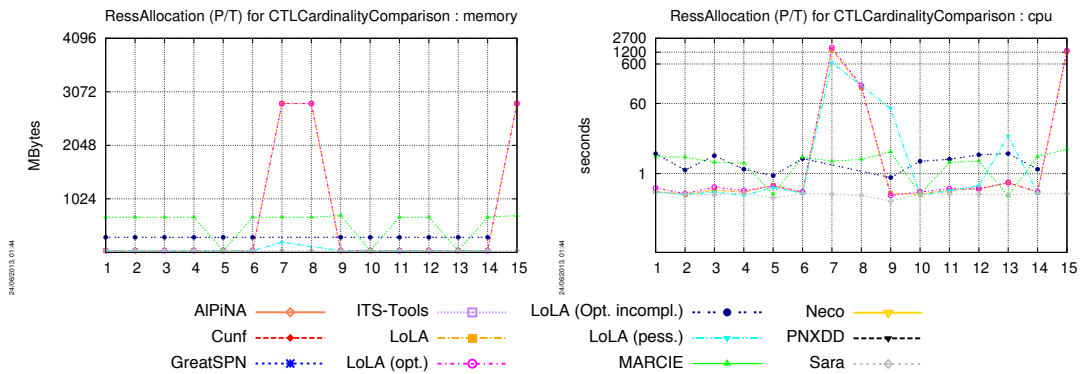


Planning (P/T) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

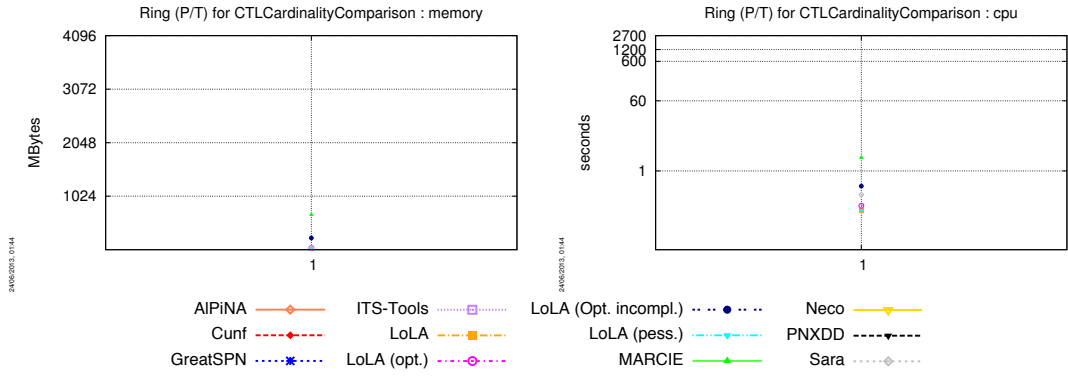
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



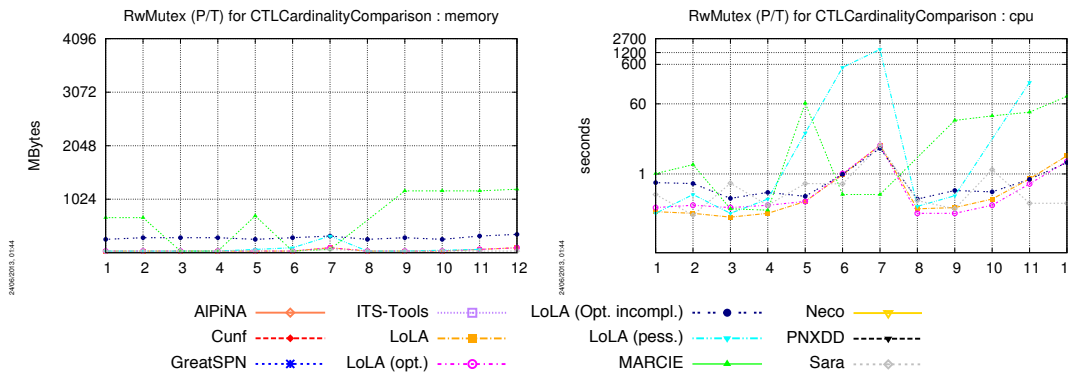
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

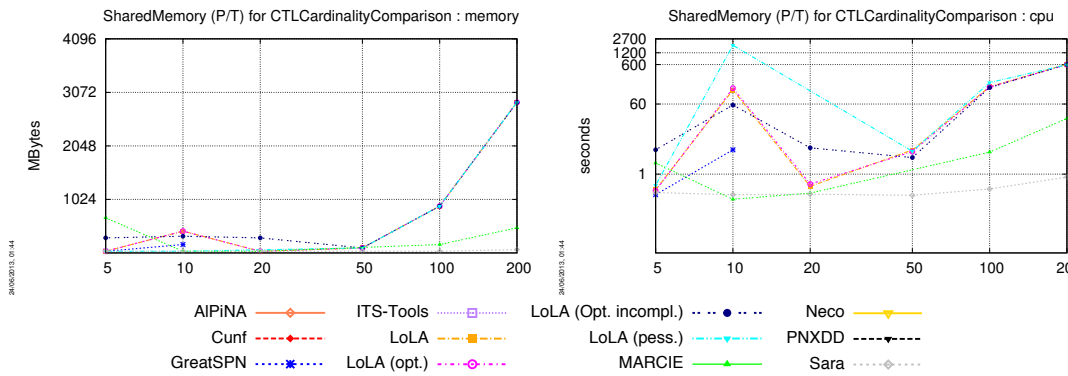


RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



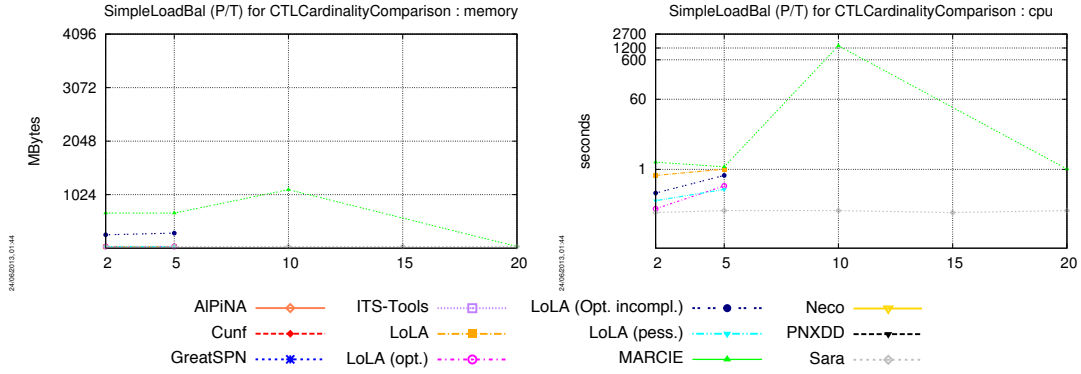
SharedMemory (colored) No instance of this model could be computed for the **CTLCardinality-Comparison** examination.

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.

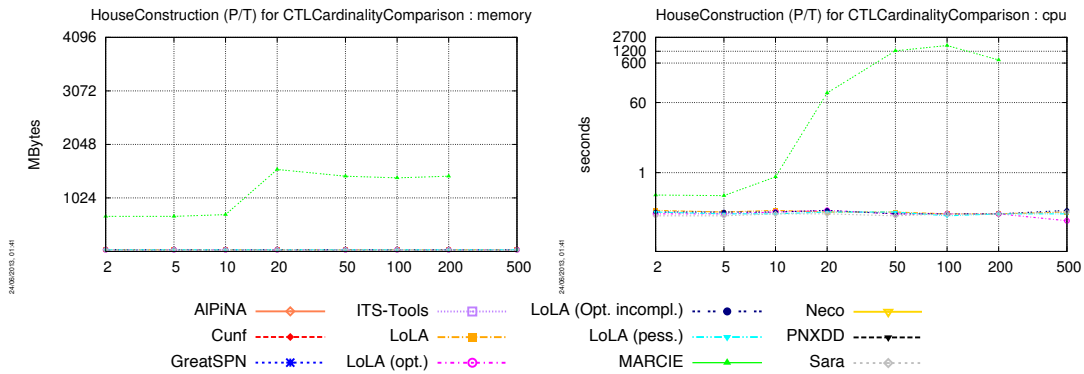
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



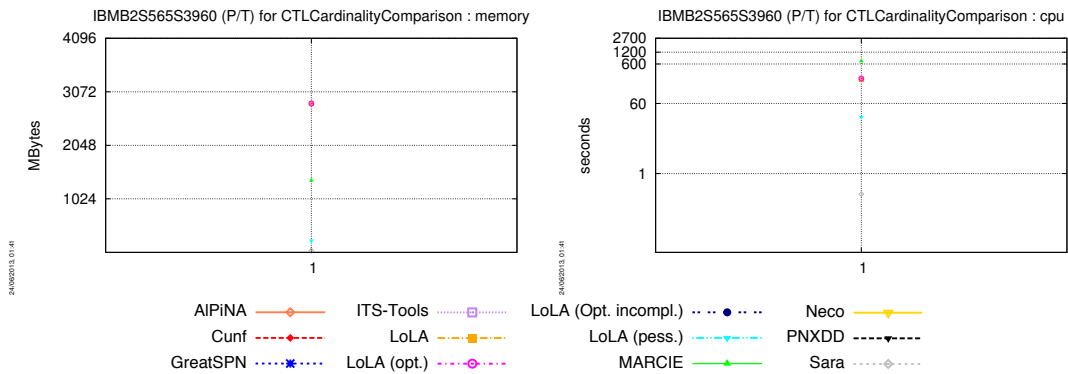
TokenRing (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

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).

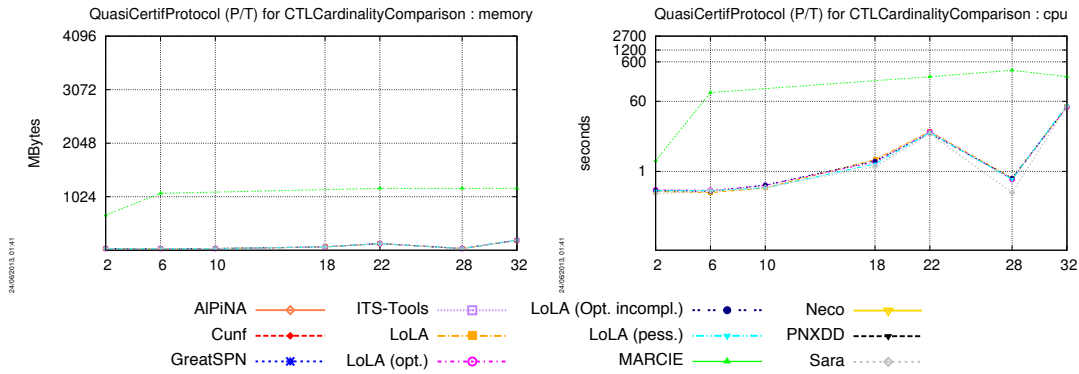


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

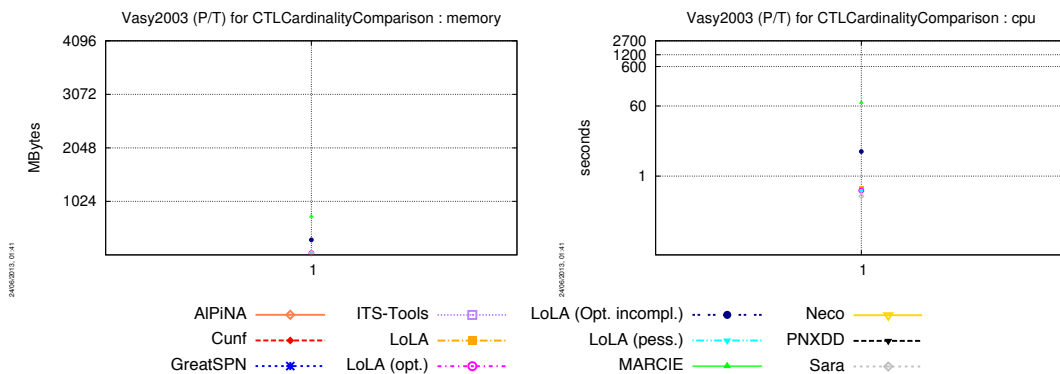


QuasiCertifProtocol (colored) No instance of this model could be computed for the **CTLCardinalityComparison** examination.

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 “Suprise” 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 LoLa	inc LoLa	pess	Marcie	Sara
02	nc	nc	nc		nc	nc	nc	nc	nc
03	nc	nc	nc		nc	nc	nc	nc	nc
04	nc	nc	nc		nc	nc	nc	nc	nc
05	nc	nc	nc		nc	nc	nc	nc	nc
07	nc	nc	nc		nc	nc	nc	nc	nc
10	nc	nc	nc		nc	nc	nc	nc	nc
CSRepetitions (P/T)									
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	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-	FFFFFFF	cc	
04	to	-FTF-F-	-FTF-F-		-FTF-F-	-FTF-F-	to	cc	
05	to	cc	cc		cc	cc	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 LoLa	inc LoLa	pess	Marcie	Sara
010	nc	FT--T-	FT--T-		-T--T-	FT--T-	FFFFFFF	cc	
015	nc	-FT-TT	-FT-TT		---T-	to	FFFFFFF	cc	
020	nc	to	to		to	to	FFFFFFF	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 LoLa	inc LoLa	pess	Marcie	Sara
2	nc	nc	nc		nc	nc	nc	nc	nc
3	nc	nc	nc		nc	nc	nc	nc	nc
4	nc	nc	nc		nc	nc	nc	nc	nc
5	nc	nc	nc		nc	nc	nc	nc	nc
DrinkVendingMachine (colored)									
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
02	nc	nc	nc		nc	nc	nc	nc	nc
10	nc	nc	nc		nc	nc	nc	nc	nc
DrinkVendingMachine (P/T)									
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
02	nc	FTFTTT-F	FTFTTT-F		FT-TTT-F	TFTTF-T	FFFFFFF	cc	
10	nc	cc	cc		cc	cc	FFFFFFF	cc	
Echo (P/T)									
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
d02r09	nc	F1FF-TF	F1FF-TF		F1FF-TF	F1FF-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 LoLa	inc LoLa	pess	Marcie	Sara
010	nc	TFF--T-	TFF--T-		-F--T-	-F--T-	cc	cc	
020	nc	FTT---	FTT---		FTT---	FT---	FFFFFFF	cc	
050	nc	---T-	---T-		---T-	---F-	FFFFFFF	cc	
100	nc	-T-F-F-	-T-F-F-		to	-T---	FFFFFFF	cc	
200	nc	-F---	-F---		to	to	FFFFFFF	cc	
500	nc	-F---F	-F---F		to	to	FFFFFFF	cc	
FMS (P/T)									
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
002	FTTTTTFF	-F-FFF	-F-FFF		---FFF	---FFF	FFFFFFF	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-	FFFFFFF	cc	
100	to	-T-F-T	-T-F-T	-T-F-T	----T	FFFFFFF	cc	
200	to	F--F-	F--F-	F--F-	F---	to	cc	
500	to	-TFT-T	-TFT-T	-TFT-T	-TFT--	to	cc	
GlobalResAlloc (colored)								
Instances	GreatSPN	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
GlobalResAlloc (P/T)								
Instances	GreatSPN	LoLa	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
03	FFFFFFF	TT-T--	TT-T--	--T--	to	FFFFFFF	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	FTTTTFFF	FFTT-F-	FFTT-F-	-FTT-F-	-FTT--	FFFFFFF	cc	
0010	FFFFTTF	-F-T-F-	-F-T-F-	-F-T--	-F-T--	FFFFFFF	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-	FFFFFFF	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	nc
3	nc	nc	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
LamportFastMutEx (P/T)								
Instances	GreatSPN	LoLa	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
2	nc	cc	cc	cc	cc	cc	cc	cc
3	nc	cc	cc	cc	cc	cc	FFFFFFF	cc
4	nc	cc	cc	cc	cc	cc	FFFFFFF	cc
5	nc	cc	cc	cc	cc	cc	to	cc
6	nc	cc	cc	cc	cc	cc	cc	cc
7	nc	cc	cc	cc	cc	cc	cc	cc
8	nc	cc	cc	cc	cc	cc	to	cc
MAPK (P/T)								
Instances	GreatSPN	LoLa	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
008	FTTTTTT	-TT-FT-	-TT-FT-	-TT-T-	-TT-T-	FTTTTFT	cc	
020	TTTTFFFF	--F-FT	--F-FT	--F-FT	---FT	TTTTTFT	cc	
040	TTTTTFFF	cc	cc	cc	cc	TTTTTFT	cc	
080	to	-F-F--	-F-F--	-F-F--	-F-F--	TTTTTFT	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	nc
3	nc	nc	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	LoLa	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
2	nc	cc	cc	cc	cc	FFFFFFF	cc	
3	nc	----T	----T	cc	cc	FFTFFFF	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	nc
02	nc	nc	nc	nc	nc	nc	nc	nc
05	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
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-	FFFFFFF	cc	
02	TFFFFTT	--T--	--T--	to	to	to	cc	
05	FTFTTTF	-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	TFTTFFF	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	nc
3	nc	nc	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
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-	FFFFFFF	cc	
3	nc	cc	cc	cc	cc	FFFFFFF	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	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
Philosophers (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc LoLa	pess	Marcie Sara
000005	TTTTTTF	F-F-TTF	F-F-TTF	---TTF	F-F-TTF	FFFFFFF	cc
000010	TTTTTTF	-F-F-T-	-F-F-T-	cc	-F-F-T-	FFFFFFF	cc
000020	TTFTTTF	---TTF	---TTF	---TTF	to	FFFFFFF	cc
000050	to	cc	cc	cc	cc	FFFFFFF	cc
000100	mp	cc	cc	cc	cc	FFFFFFF	cc
000200	FTFF	cc	cc	cc	cc	FFFFFFF	cc
000500	to	cc	cc	cc	cc	FFFFFFF	cc
001000	mp	cc	cc	cc	cc	FFFFFFF	cc
002000	mp	cc	cc	cc	cc	FFFFFFF	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	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	FFFFFFF	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
ResAllocation (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	FFFFFFF	cc
R003C002	nc	--T-F-	--T-F-	--T-F-	---F-	FFFFFFF	---T-
R003C003	nc	-T-T-F-T	-T-T-F-T	-T-T-F-T	-T-T-F-T	FFFFFFF	cc
R003C005	nc	-F--F-	-F--F-	-F---	-F---	FFFFFFF	cc
R003C010	nc	---T-	---T-	cc	cc	cc	cc
R003C015	nc	--F-FT-	--F-FT-	--F-FT-	--F-FT-	FFFFFFF	cc
R003C020	nc	--T-T-T	--T-T-T	to	--T-T-T	FFFFFFF	cc
R003C050	nc	-FF-T-	-FF-T-	to	to	FFFFFFF	cc
R003C100	nc	--T--	--T--	--T--	--T--	FFFFFFF	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	FFFFFFF	cc
R015C002	nc	T-F-F-F	T-F-F-F	-F-F-F	T-F-F-F	FFFFFFF	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-	FFFFFFF	cc
R100C002	nc	---TF	---TF	to	to	FFFFFFF	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	FFFFFFF	---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-	FFFFFFF	cc
r0010w0020	nc	-FTF-T	-FTF-T	--FT-T	--FTF-	FFFFFFF	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	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	LoLa	LoLa opt	LoLa opt	inc	LoLa	pess	Marcie Sara
000005	FTTFTFFF	T-FT-FF-	T-FT-FF-	---F-	cc	FFFFFFFF	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	nc
05	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc	nc	nc
20	nc	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---	FFFFFFFF	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	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	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
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		FFFFTFFF	cc
005	cc	cc		cc		FFFFTFFF	cc
010	cc	cc		cc		FFFFTFFF	cc
020	cc	cc		cc		FFFFTFFF	cc
050	cc	cc		cc		cc	cc
100	cc	cc		cc		cc	cc
200	cc	cc		cc		cc	cc
500	cc	cc		cc		to	---FFF

IBMB2S565S3960 (P/T)							
instances	LoLA	LoLa	opt LoLa	opt inc	LoLa	pess	Marcie Sara
none	---TT-	---TT-		to		---T-	FFFFTFFF cc

QuasiCertifProtocol (colored)							
instances	LoLA	LoLa	opt LoLa	opt inc	LoLa	pess	Marcie Sara
02	nc	nc		nc		nc	nc
06	nc	nc		nc		nc	nc
10	nc	nc		nc		nc	nc
18	nc	nc		nc		nc	nc
22	nc	nc		nc		nc	nc
28	nc	nc		nc		nc	nc
32	nc	nc		nc		nc	nc

QuasiCertifProtocol (P/T)							
instances	LoLA	LoLa	opt LoLa	opt inc	LoLa	pess	Marcie Sara
02	cc	cc		cc		FFFFTFFF	cc
06	cc	cc		cc		FFFFTFFF	cc
10	cc	cc		cc		to	cc
18	cc	cc		cc		to	cc
22	cc	cc		cc		cc	cc
28	cc	cc		cc		cc	cc
32	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	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
CSRepetitions (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1	0
instances	2	3	3	2	3	1	1	0
max reached	0	0	0	0	0	0	0	0
best	0	2	2	2	2	0	0	0
subtotal	3	6	6	5	6	2	2	0
Dekker (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1	0
instances	0	3	3	3	1	3	3	0
max reached	0	0	0	0	0	0	0	0
best	0	2	2	2	0	0	0	0
subtotal	0	6	6	6	2	4	4	0
DotAndBoxes (Colored)								
	GreatSPN	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
DrinkVendingMachine (Colored)								
	GreatSPN	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
DrinkVendingMachine (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1	0
instances	0	1	1	1	1	2	2	0
max reached	0	0	0	0	0	2	2	0
best	0	0	0	0	0	2	2	0
subtotal	0	2	2	2	2	7	7	0
Echo (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
1st instance	0	1	1	1	1	0	0	1
instances	0	9	9	2	4	0	0	2
max reached	0	2	2	0	0	0	0	0
best	0	2	2	0	0	0	0	0
subtotal	0	14	14	3	5	0	0	3
Eratosthenes (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
1st instance	0	1	1	1	1	1	1	0
instances	0	6	6	3	4	5	5	0
max reached	0	2	2	0	0	2	2	0
best	0	2	2	0	0	2	2	0
subtotal	0	11	11	4	5	10	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	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

PermAdmissibility (Colored)										
	GreatSPN	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
PermAdmissibility (P/T)										
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pess	Marcie	Sara
1st instance	1	1	1		1		1	1	1	0
instances	5	5	5		2		2	1	1	0
max reached	2	2	2		0		0	0	0	0
best	2	2	2		0		0	0	0	0
subtotal	10	10	10		3		3	2	2	0
Peterson (Colored)										
	GreatSPN	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
Peterson (P/T)										
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pess	Marcie	Sara
1st instance	0	1	1		1		1	1	1	0
instances	0	2	2		1		1	2	2	0
max reached	0	0	0		0		0	0	0	0
best	0	2	2		0		0	0	0	0
subtotal	0	5	5		2		2	3	3	0
Philosophers (Colored)										
	GreatSPN	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	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pess	Marcie	Sara
1st instance	1	1	1		1		1	1	1	0
instances	4	3	3		2		2	9	9	0
max reached	0	0	0		0		0	0	0	0
best	0	0	0		0		0	2	2	0
subtotal	5	4	4		3		3	12	12	0
PhilosophersDyn (Colored)										
	GreatSPN	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	LoLA	LoLa	opt LoLa	opt	inc	LoLa	pess	Marcie	Sara
1st instance	1	1	1		1		1	0	0	0
instances	2	2	2		2		2	0	0	0
max reached	0	0	0		0		0	0	0	0
best	2	2	2		2		2	0	0	0
subtotal	5	5	5		5		5	0	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	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	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 172 points	LoLa opt 172 points	Marcie 102 points

For “Surprise” Models

1	2	2
		
Marcie 22 points	LoLA 12 points	LoLa opt 12 points

Global

1	1	3
		
LoLA 196 points	LoLa opt 196 points	Marcie 146 points

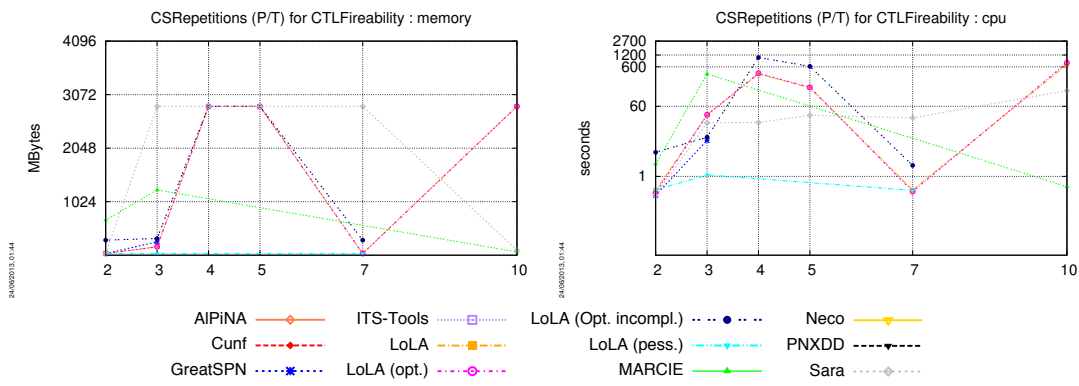
14 The CTLFireability Examination

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.

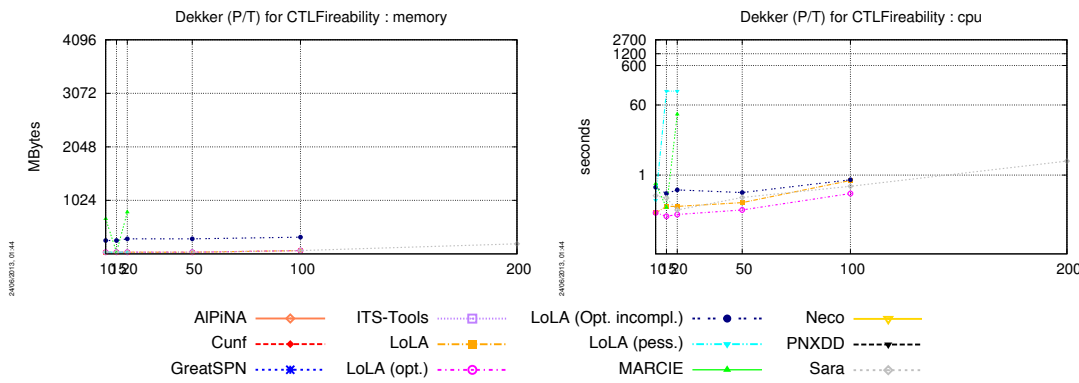
14.1 Handling of Models by Tools

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).



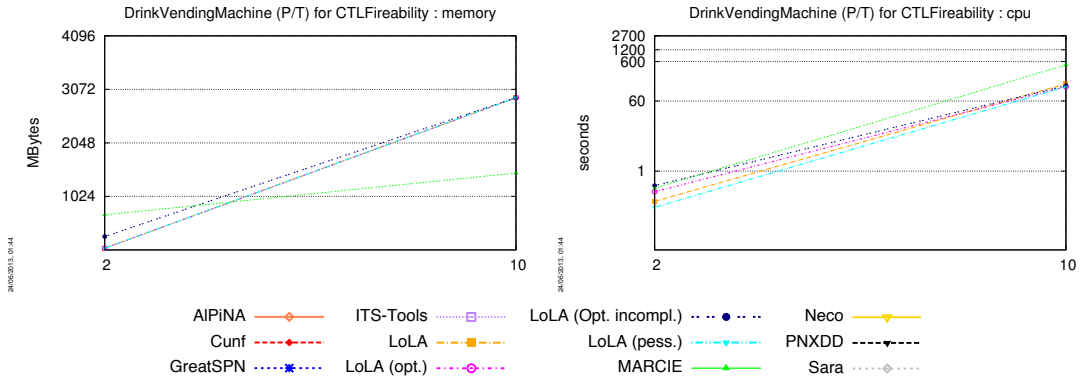
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



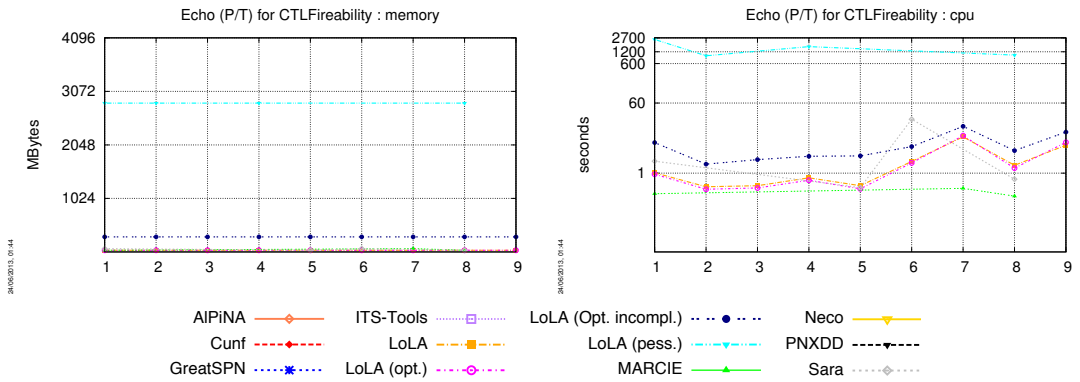
DotAndBoxes (colored) No instance of this model could be computed for the **CTLFireability** examination.

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

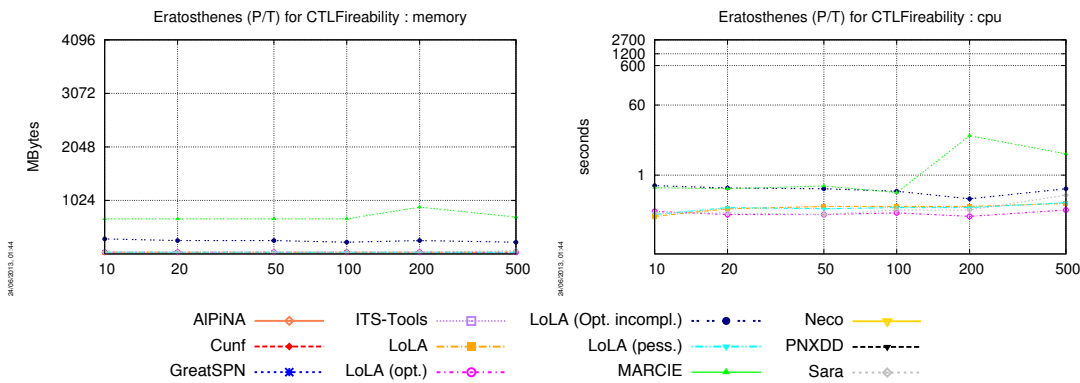
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



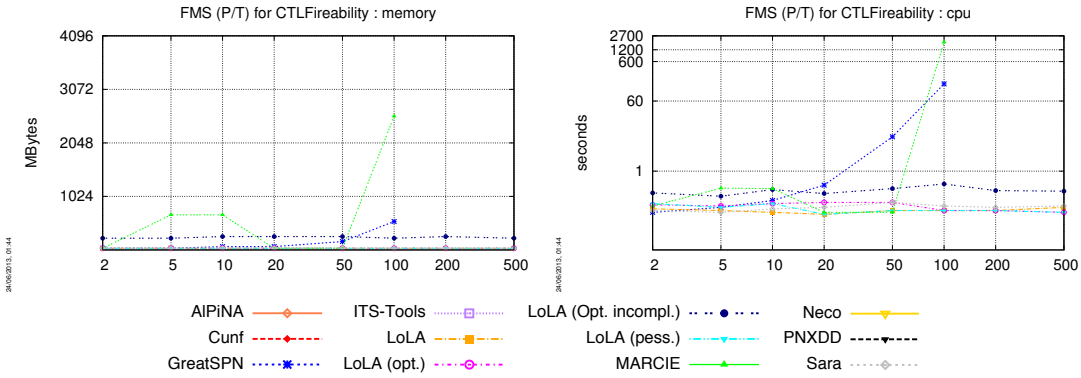
Echo (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

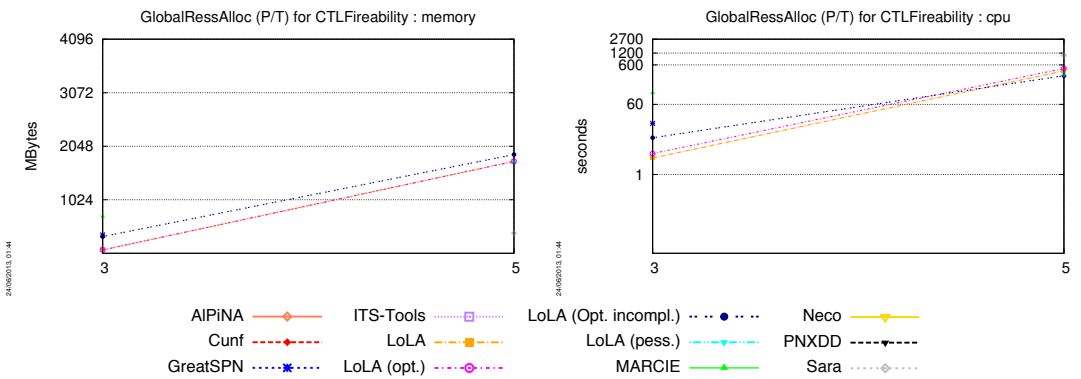


FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

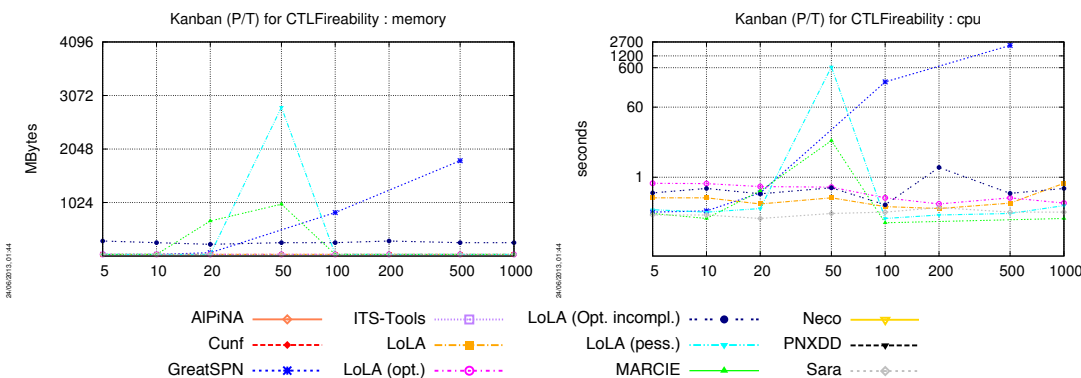


GlobalRessAlloc (colored) No instance of this model could be computed for the **CTLFireability** examination.

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

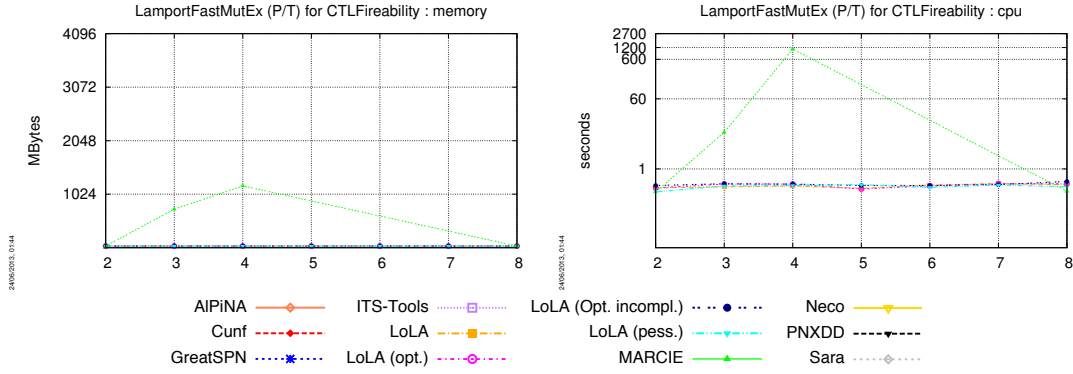


Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

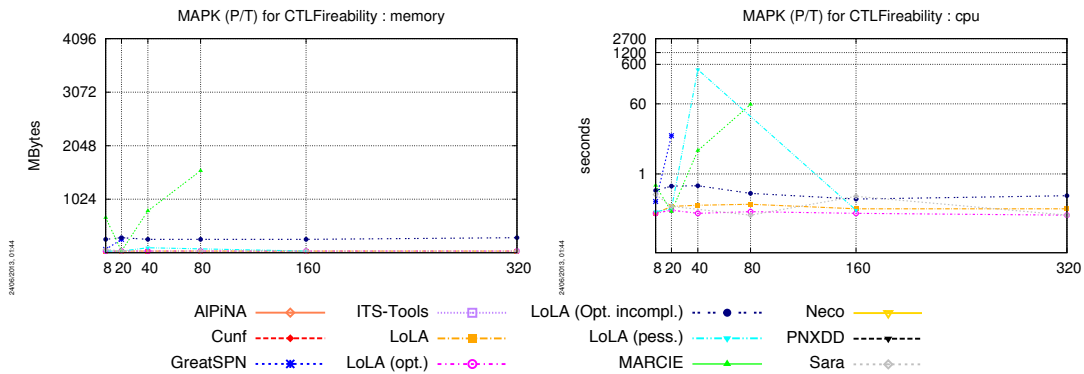


LamportFastMutEx (colored) No instance of this model could be computed for the **CTLFireability** examination.

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

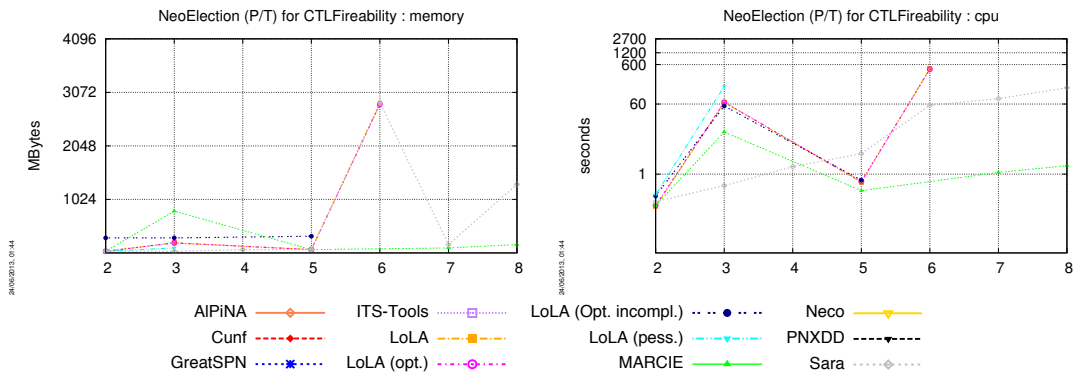


MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



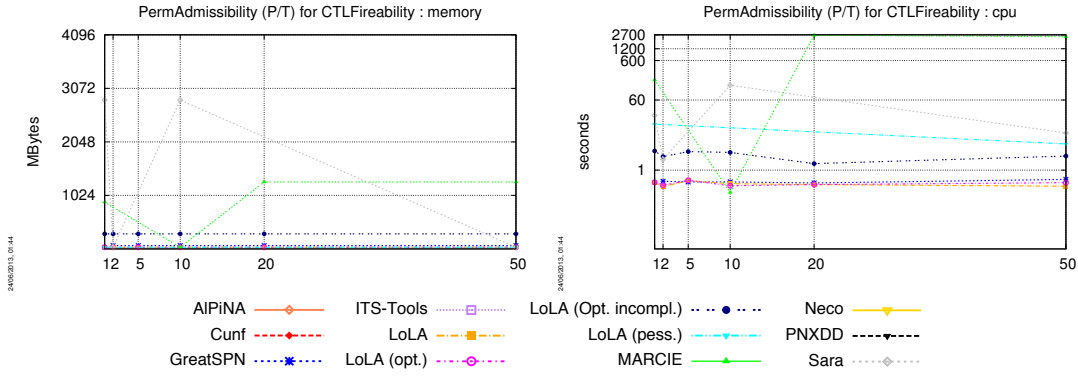
NeoElection (colored) No instance of this model could be computed for the **CTLFireability** examination.

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



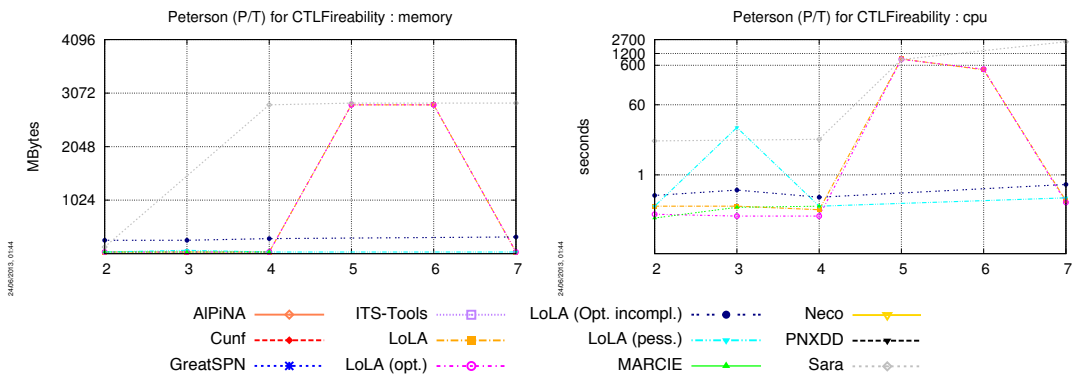
PermAdmissibility (colored) No instance of this model could be computed for the **CTLFireability** examination.

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



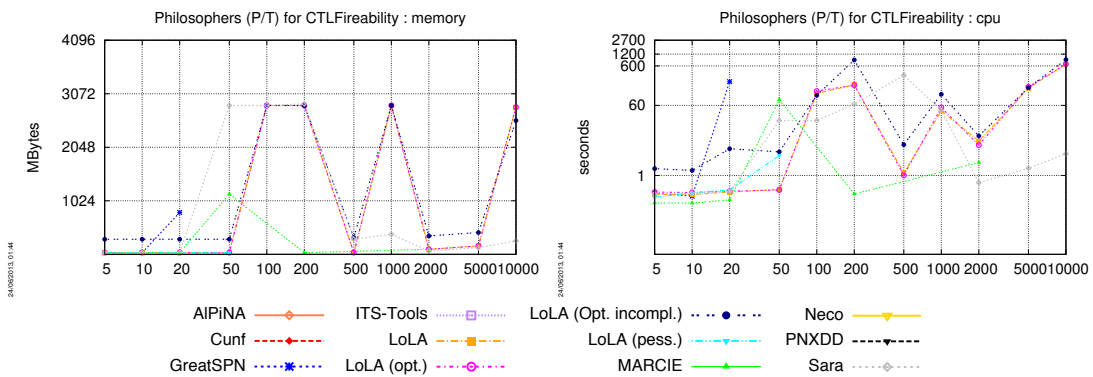
Peterson (colored) No instance of this model could be computed for the **CTLFireability** examination.

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



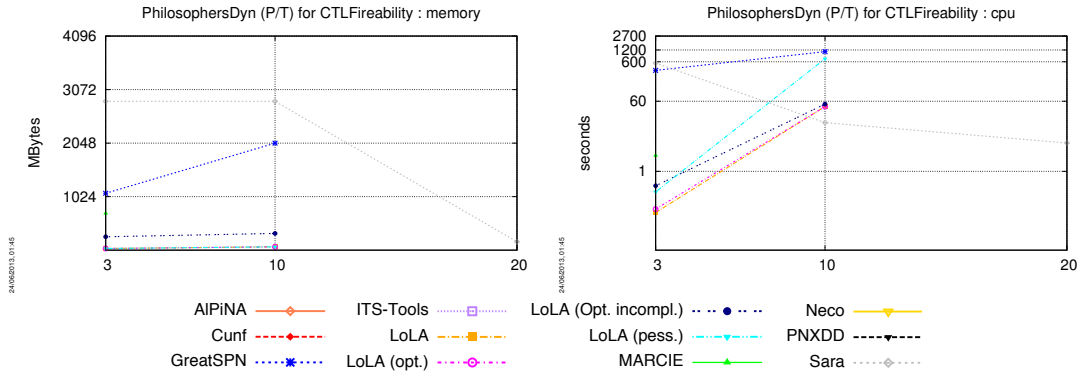
Philosophers (colored) No instance of this model could be computed for the **CTLFireability** examination.

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



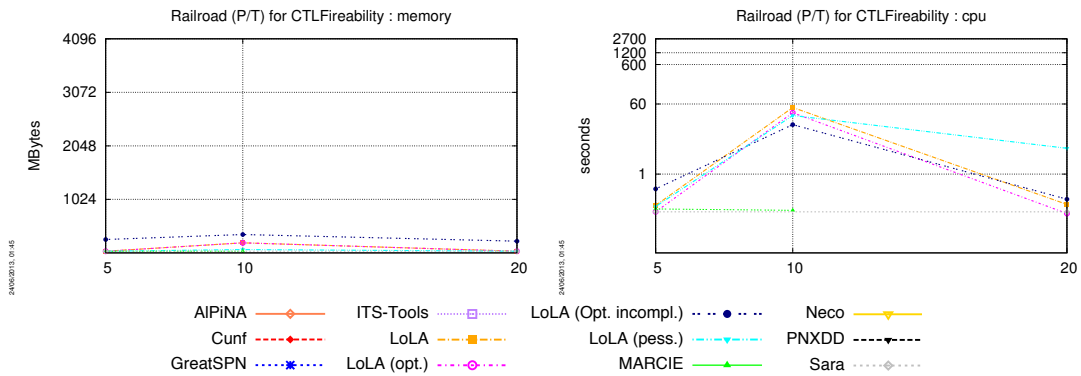
PhilosophersDyn (colored) No instance of this model could be computed for the **CTLFireability** examination.

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

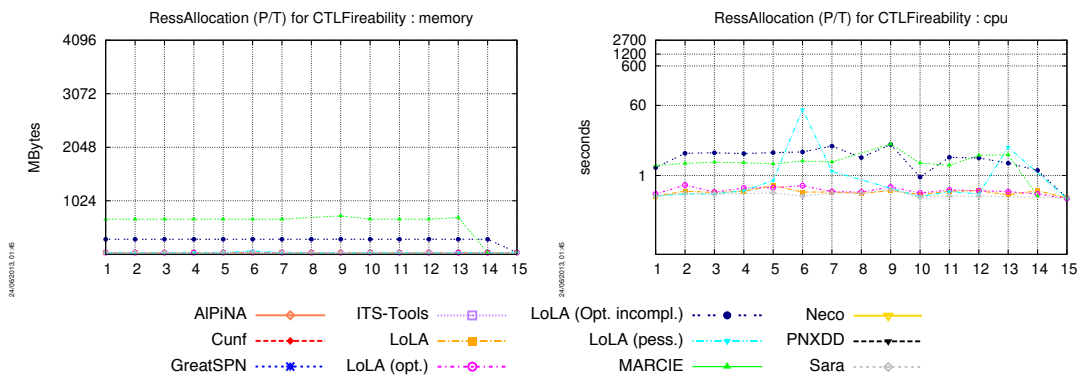


Planning (P/T) No instance of this model could be computed for the **CTLFireability** examination.

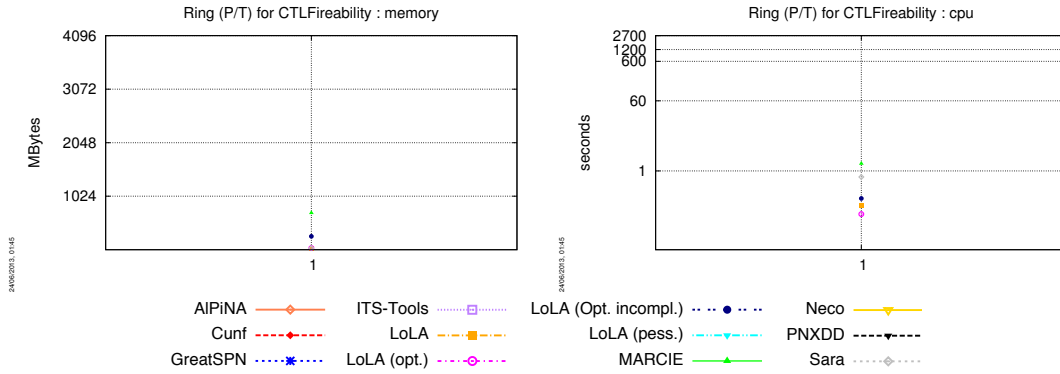
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



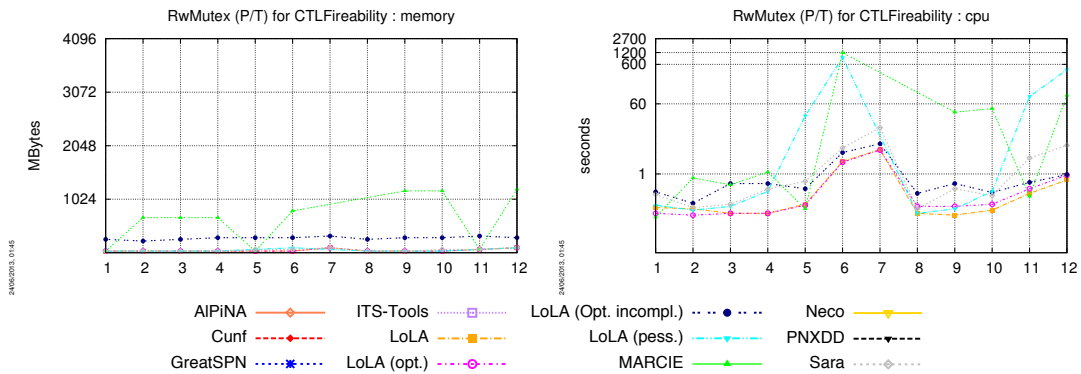
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

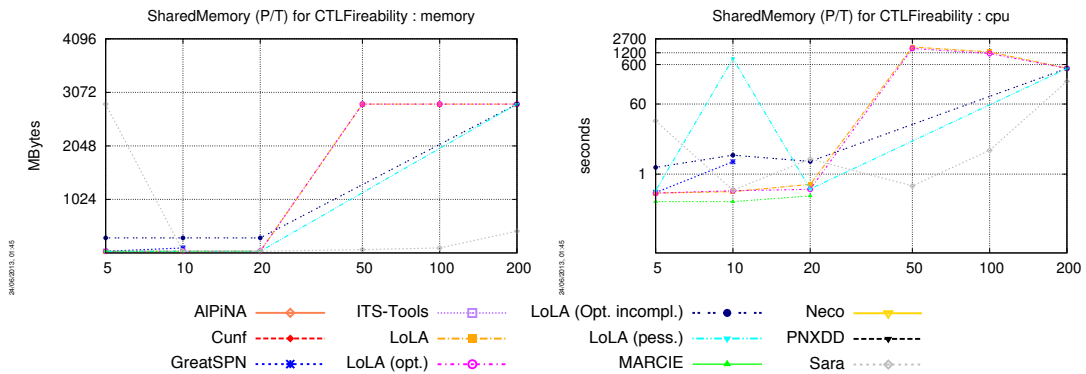


RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



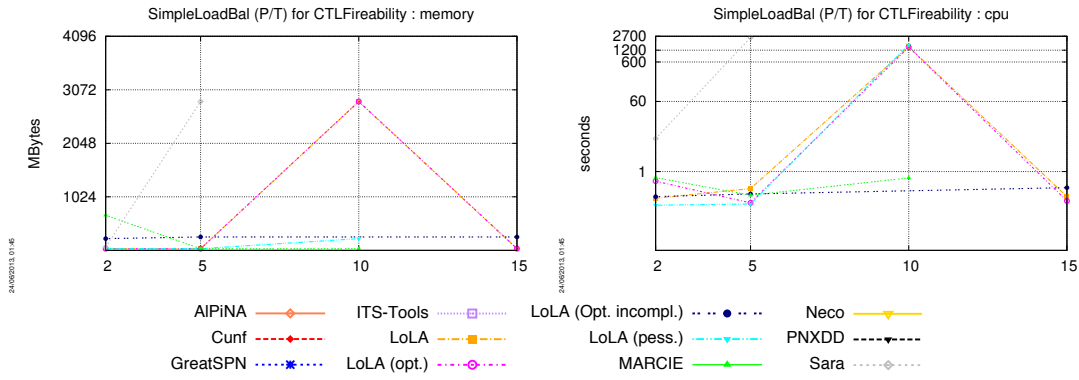
SharedMemory (colored) No instance of this model could be computed for the **CTLFireability** examination.

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



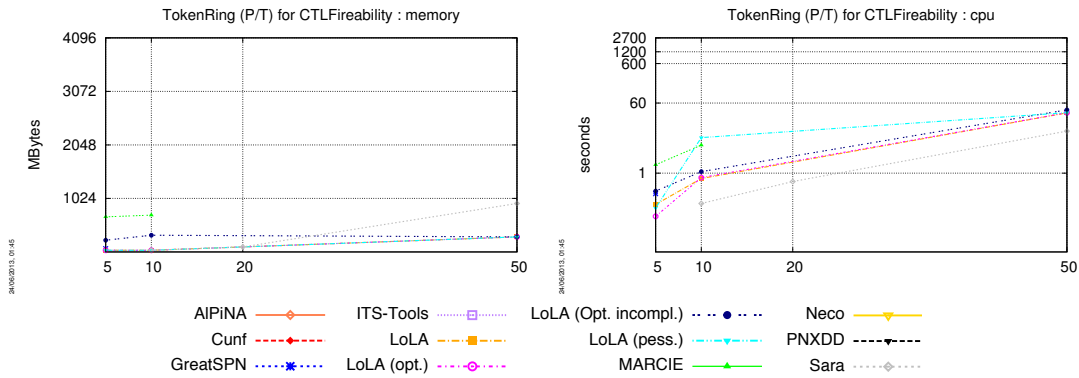
SimpleLoadBal (colored) No instance of this model could be computed for the **CTLFireability** examination.

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

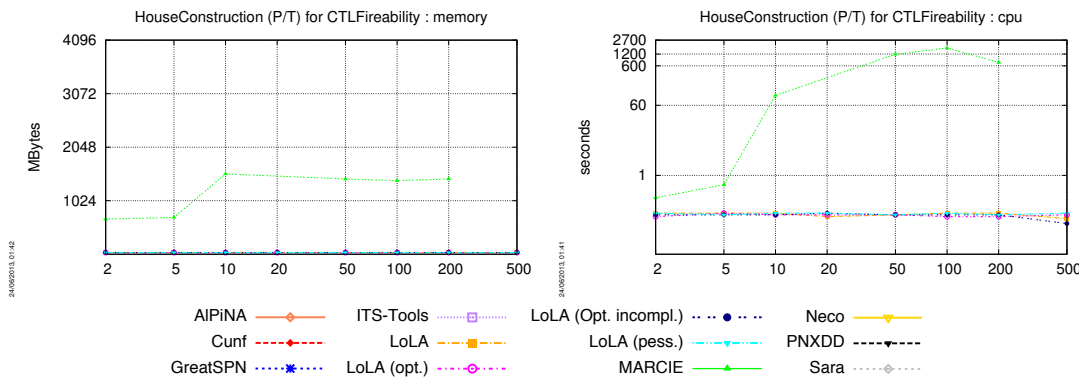


TokenRing (colored) No instance of this model could be computed for the **CTLFireability** examination.

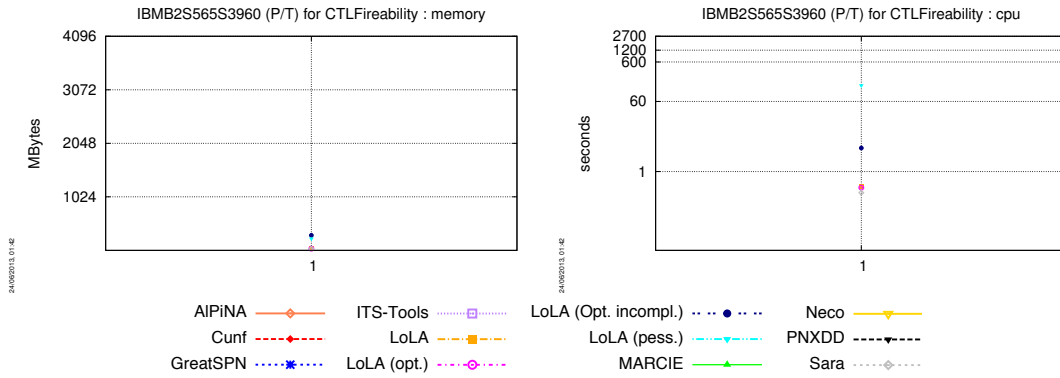
TokenRing (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

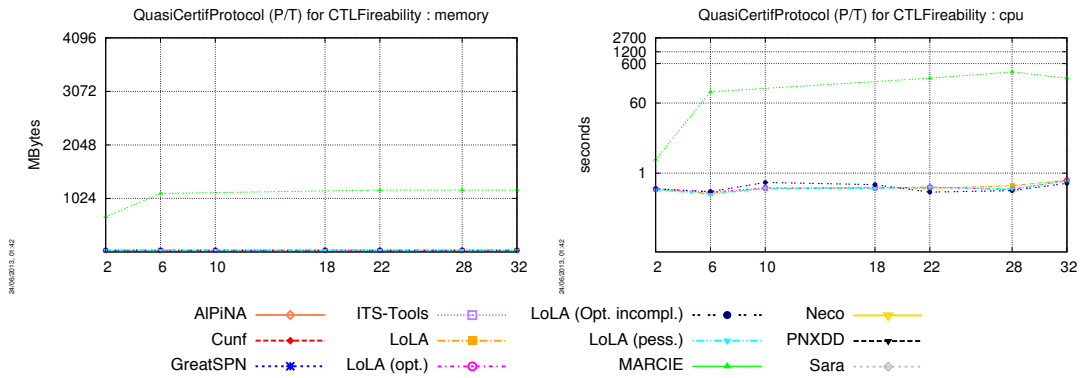


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

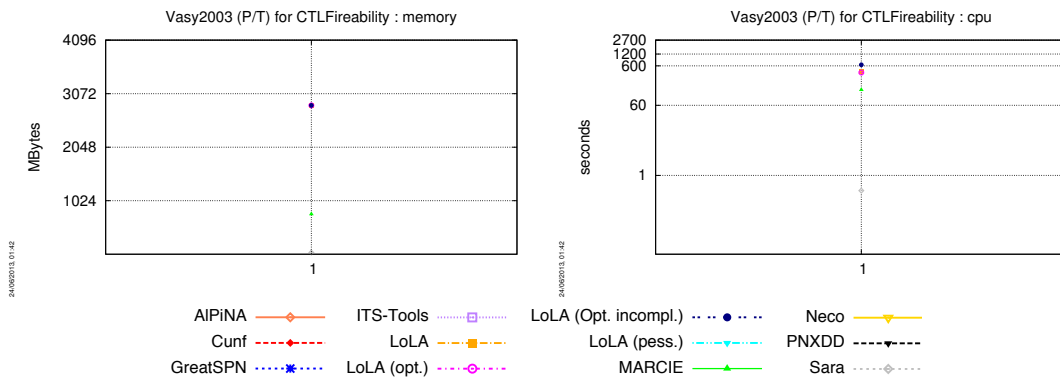


QuasiCertifProtocol (colored) No instance of this model could be computed for the **CTLFireability** examination.

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	nc
03	nc	nc	nc			nc		nc	nc	nc	nc
04	nc	nc	nc			nc		nc	nc	nc	nc
05	nc	nc	nc			nc		nc	nc	nc	nc
07	nc	nc	nc			nc		nc	nc	nc	nc
10	nc	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	FFFFTFFF		cc	cc
015	nc	T--T-	T--T-		T--T-		T--T-		cc	cc	cc
020	nc	-F-T-F-	-F-T-F-		-F-T-F-		-F-T-F-	FFFFTFFF		cc	cc
050	nc	-TT-F-F	-TT-F-F		-TT-F-F		to	to		cc	cc
100	nc	-TT-TFT	-TT-TFT		-TT-TFT		to	to		cc	cc
200	nc	to	to		to		to	to		cc	cc
DotAndBoxes (colored)											
Instances	GreatSPN	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Marcie	Sara
2	nc	nc	nc			nc		nc	nc	nc	nc
3	nc	nc	nc			nc		nc	nc	nc	nc
4	nc	nc	nc			nc		nc	nc	nc	nc
5	nc	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	nc
10	nc	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	to
10	nc	cc	cc		cc		cc	FFFFTFTF		to	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	FFTTTF-	
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	FFTTTF	-T-TF-F	
020	nc	F-FF-T-	F-FF-T-	F-FF-T-	F-FF-T-	FFFFTT	F-TT-T-	
050	nc	-FT-T-T	-FT-T-T	-FT-T-T	-FT-T-T	FFTTFT	-FT-T-T	
100	nc	FFT--TT	FFT--TT	FFT--TT	FFT--TT	FFTTFT	FFT--TT	
200	nc	-F-T-T-	-F-T-T-	-F-T-T-	-F-T-T-	TFTTTF	-F-T-T-	
500	nc	FFF-F-T	FFF-F-T	FFF-F-T	FFF-F-T	FFFTFT	FFF-TF-T	
FMS (P/T)								
Instances	GreatSPN	LoLa	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
002	FFTTFFF	-TFT--	-TFT--	-TFT--	-TTT--	cc	-TFTF--	
005	FFTTFFF	-T---T	-T---T	-T---T	-T---	FFTTFT	-T---T	
010	FFTTFTT	F-TF-T-T	F-TF-T-T	F-TF-T-T	cc	FFFTFT	F-TFT-T	
020	FFTTFTF	-T--TT-	-T--TT-	-T--TT-	-T--TT-	cc	-T--TT-	
050	TFTTFFF	T-T-FF-	T-T-FF-	T-T-FF-	--T-F-	cc	T-T-FF-	
100	FFFTFTF	FF-T--F	FF-T--F	FF-T--F	-F-T--T	FFFTFFF	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-	
GlobalResAlloc (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	
GlobalResAlloc (P/T)								
Instances	GreatSPN	LoLa	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
03	TFTTFTF	T-FF-FT-	T-FF-FT-	T-F-FT-	to	TFTTFTF	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	FFTTFFF	FT-T-F-	FT-T-F-	FT-T-F-	---F-	FFTTFF	FT-T-F-	
0050	to	-FF-TF-	-FF-TF-	-FF-TF-	cc	FFFFTFT	-FF-TF-	
0100	FFTT?FFF	-T---	-T---	-T---	cc	cc	-T---	
0200	mp	FF-F-TT	FF-F-TT	FF-F-TT	-F-F--	to	FF-F-TT	
0500	FFF	-TTF--	-TTF--	-TTF--	cc	to	-TTF--	
1000	to	FT--TF-	FT--TF-	FT--TF-	FT---	cc	FT--TF-	
LampportFastMutex (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	
LampportFastMutex (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	FFFTIFFF		cc
4	nc	cc	cc			cc		cc	FFTTITFT		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	FFFTIFFT		-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	FFFFFFF		T-F-TFF
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	FFFTFFTF		F--T-T
02	FFFTFFFF	FF--F-	FF--F-			FF--F-		to	to		FF--F-
05	FTFT?FTF	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	FFFFFFFTF	T-F---	T-F---			T-F---		to	cc		to
50	FFFTITTF	-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	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	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	FTFFFFF	-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	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	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
03	TTTTFFFF	TT--F-	TT--F-	TT--F-	TT--F-	TTTTFFFF	-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	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	
ResAllocation (P/T)								
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
R002C002	nc	---F-T	---F-T	cc	---F-T	FTFTFTF	---F-F	
R003C002	nc	T-FT-TT-	T-FT-TT-	--T-T-	---TT-	FTFTFTF	T-TTTT-	

R003C003	nc	T-FT-F-F	T-FT-F-F	T-FT-F-F	T-FT-F-F	TFTTFTF	T-FTTF-F			
R003C005	nc	-TFF-F-F	-TFF-F-F	-T-F--	-T-F-F-F	FTFTFFF	to			
R003C010	nc	T-T-TFT	T-T-TFT	---TFT	T-T-TFT	FFFFFFT	T-T-FTFT			
R003C015	nc	TTF-TF-	TTF-TF-	TTF-TF-	FTT-TF-	TFTTFTT	TTF-TF-			
R003C020	nc	FFTT-TFT	FFTT-TFT	FFTT-TFT	FFTT-TFT	FFTTFTT	FFTT-TFT			
R003C050	nc	FT-T-T-	FT-T-T-	FT-T-T-	to	to	FT-TTT-			
R003C100	nc	FTFTFT-	FTFTFT-	FTFTFT-	to	FTFTFTF	FTFTFT-			
R005C002	nc	---F-	---F-	---F-	---F-	FTFTFFF	--T-F-			
R010C002	nc	F-TT--F	F-TT--F	--T--F	F-TT--F	FTFTFFF	F-FT--F			
R015C002	nc	-FF-F-T	-FF-F-T	-FF-F-T	-FF-F-T	FFFFFFT	-FF-TF-T			
R020C002	nc	T---FF	T---FF	---FF	T---FT	FFFFFFF	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	FTFTFFF	-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	TFTTFTF	----F			
r0010w0050	nc	T-FF-T-F	T-FF-T-F	--F-T-F	T-FF-T-F	FTFTFFF	T-FF-T-F			
r0010w0100	nc	FF-F-FF	FF-F-FF	-F-F-F-	cc	FFFFFFT	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	FTFTFFF	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	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	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	nc	nc	
05	nc	nc	nc	nc	nc	nc	nc	nc	nc	
10	nc	nc	nc	nc	nc	nc	nc	nc	nc	
15	nc	nc	nc	nc	nc	nc	nc	nc	nc	

20	nc	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--	FFFFFTT	--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	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	LoLa	LoLa opt	LoLa opt	inc LoLa	pess	Marcie	Sara
005	FTFTFTF	-T--FT	-T--FT	-T--F-	-T--F-	FTFTFTF	to	
010	to	---T-	---T-	cc	cc	FTFTFTF	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	TFTTTTT	cc		
005	cc	cc	cc	cc	TTTTTTT	cc		
010	cc	cc	cc	cc	TTTTTTT	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	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	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	LoLa	LoLa opt	LoLa opt	inc LoLa	pess	Marcie	Sara	
02	cc	cc	cc	cc	FTTTTTT	cc		
06	cc	cc	cc	cc	TTTTTTT	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	FTTTTTT	-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									
Total Score	GreatSPN	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara	
	47	198	198		178		113	83	152
CSRepetitions (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
CSRepetitions (P/T)									
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)									
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)									
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)									
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)									
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

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	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)									
	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	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)									
	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		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)									
	GreatSPN	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
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		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)									
	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	0	1
instances	2	5	5		2		2	0	3

max reached	0	0	0	0	0	0	0	0
best	0	2	2	0	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	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
SimpleLoadBal (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	pess	Marcie Sara
1st instance	0	1	1	1	1	1	1	1
instances	0	4	4	3	3	3	1	2
max reached	0	0	0	0	0	0	0	0
best	0	2	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	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	LoLA	LoLa	opt LoLa	opt	inc LoLa	pess	Marcie Sara
1st instance	1	1	1	1	1	1	1	0
instances	1	2	2	1	1	1	2	0
max reached	0	0	0	0	0	0	0	0
best	0	2	2	0	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 can 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	0	1	0	0
instances	0	0	0	0	0	3	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	2	0	0
subtotal	0	0	0	0	0	6	0	0
IBMB2S565S3960 (P/T)								
	LoLA	LoLa	opt LoLa	opt	inc LoLa	pess	Marcie	Sara
1st instance	1	1	1	1	1	0	0	0
instances	1	1	1	1	1	0	0	0
max reached	2	2	2	2	2	0	0	0
best	2	2	2	2	2	0	0	0
subtotal	6	6	6	6	6	0	0	0
QuasiCertifProtocol (Colored)								
	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
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

1	1	3
		
LoLA 198 points	LoLa opt 198 points	LoLa opt inc 178 points

For “Surprise” Models

1	2	2
		
Marcie 17 points	LoLA 12 points	LoLa opt 12 points

Global

1	1	3
		
LoLA 222 points	LoLa opt 222 points	LoLa opt inc 202 points

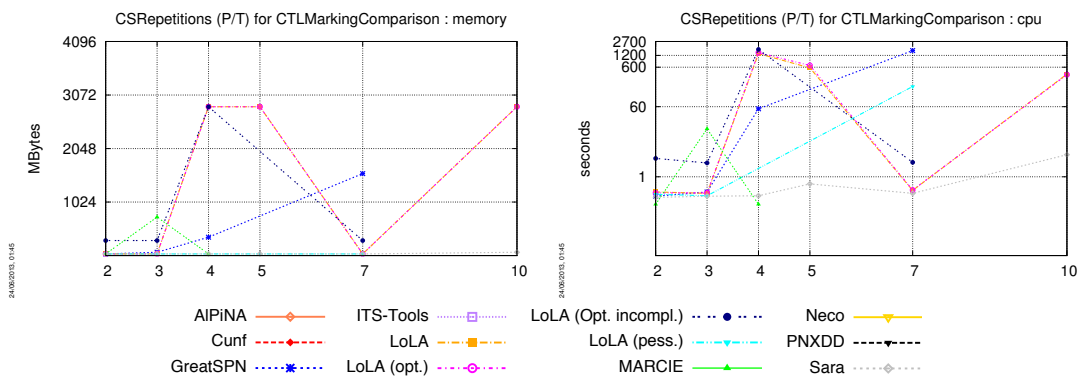
15 The CTLMarkingComparison Examination

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).

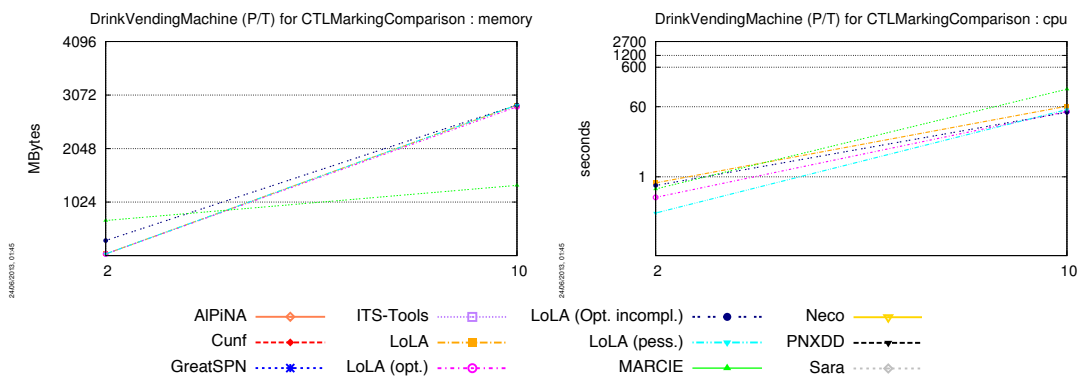


Dekker (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

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).



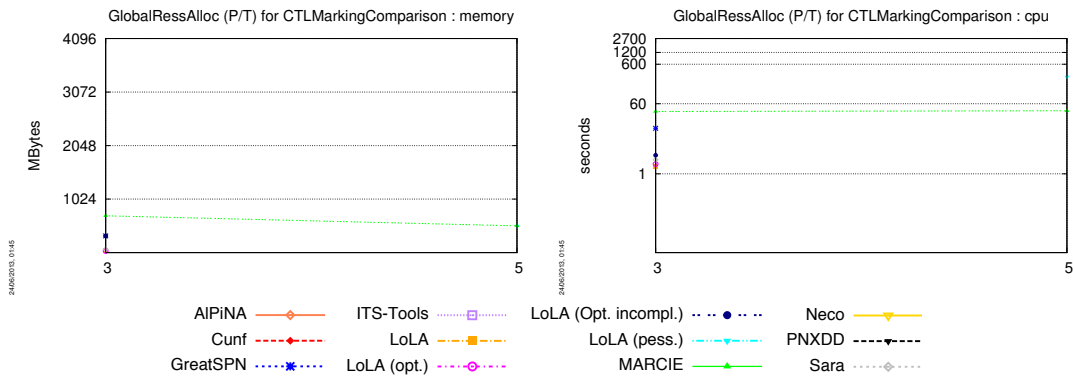
Echo (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

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.

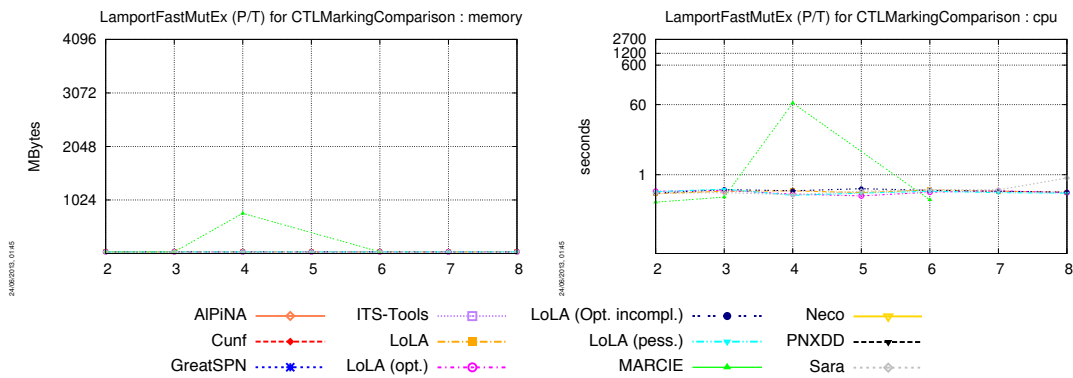
GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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.

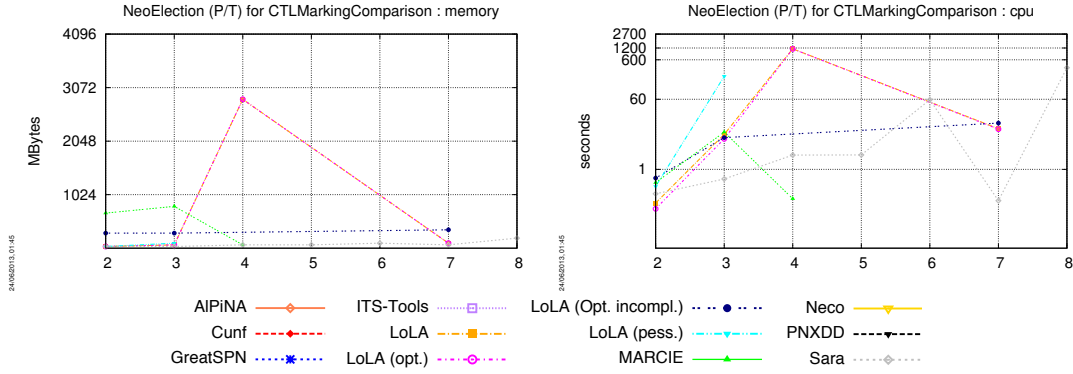
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

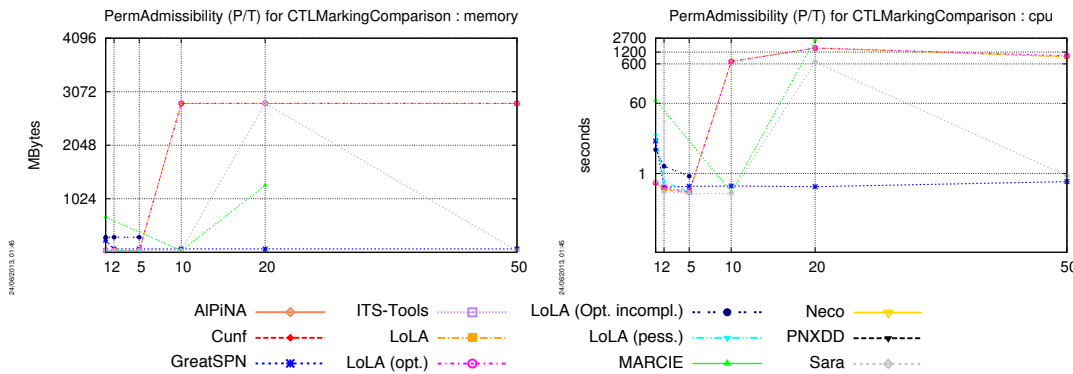
NeoElection (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

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



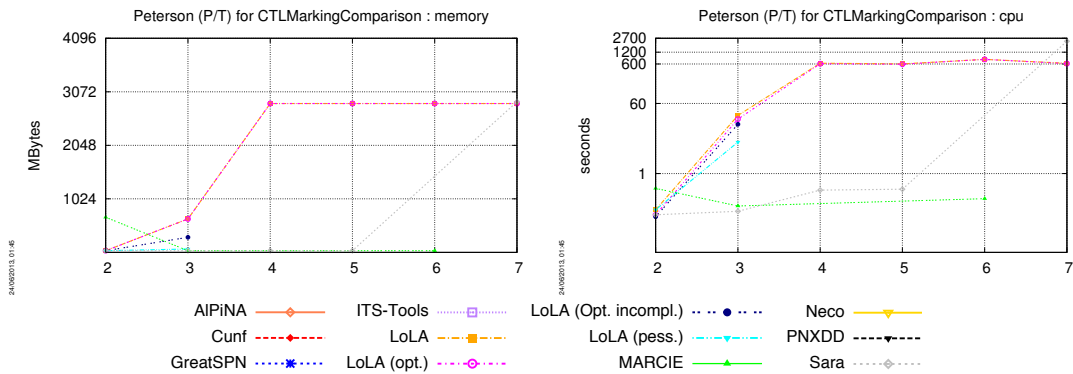
PermAdmissibility (colored) No instance of this model could be computed for the CTLMarkingComparison examination.

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



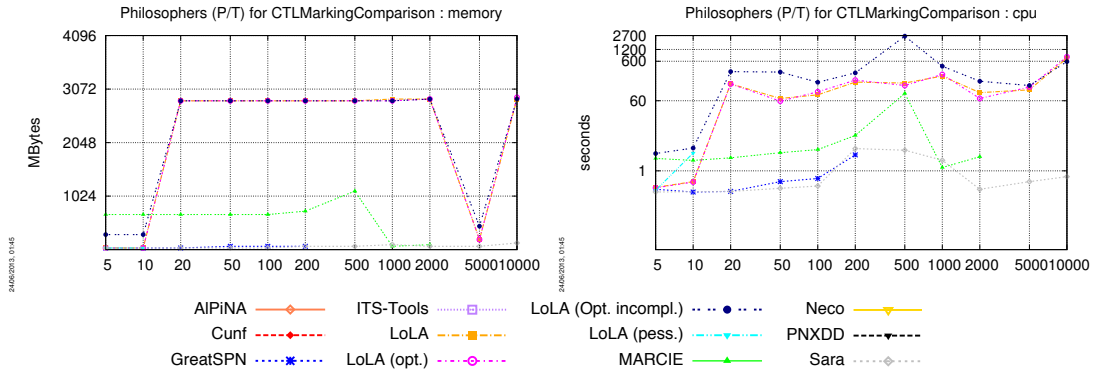
Peterson (colored) No instance of this model could be computed for the CTLMarkingComparison examination.

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



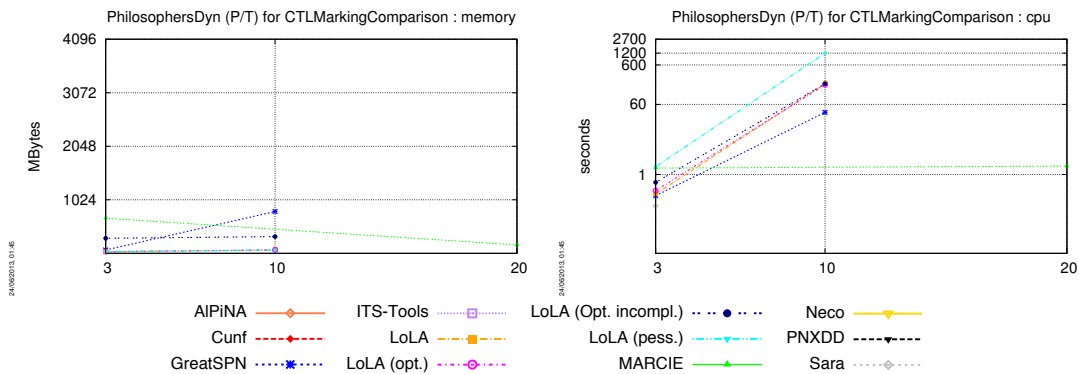
Philosophers (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

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.

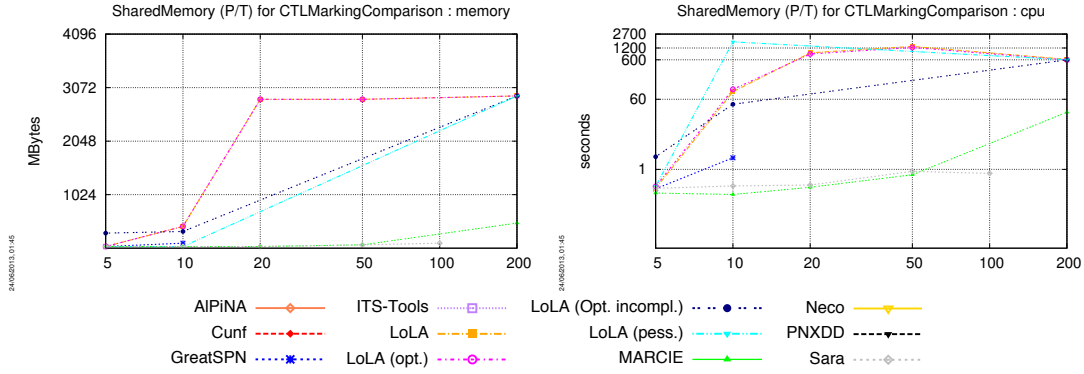
RessAllocation (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

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.

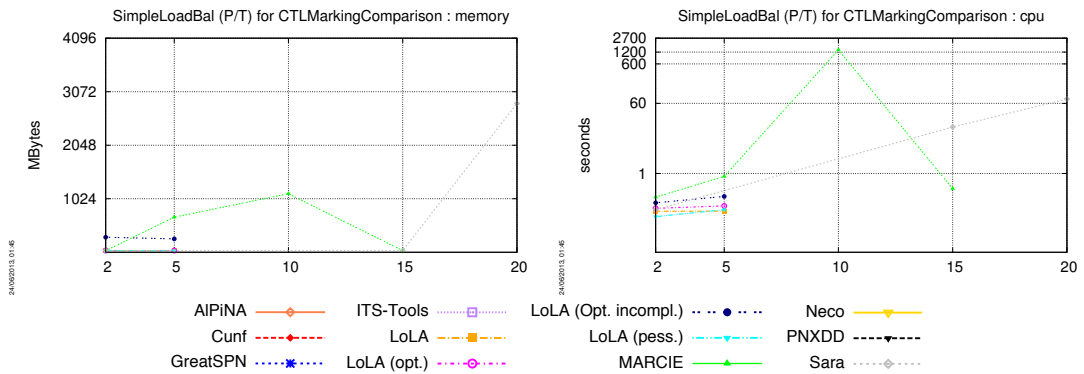
SharedMemory (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

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



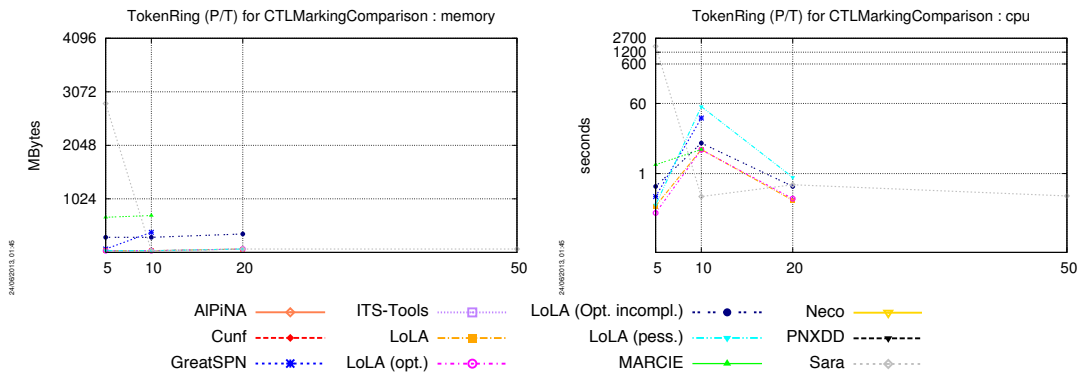
SimpleLoadBal (colored) No instance of this model could be computed for the **CTLMarkingComparison** examination.

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).

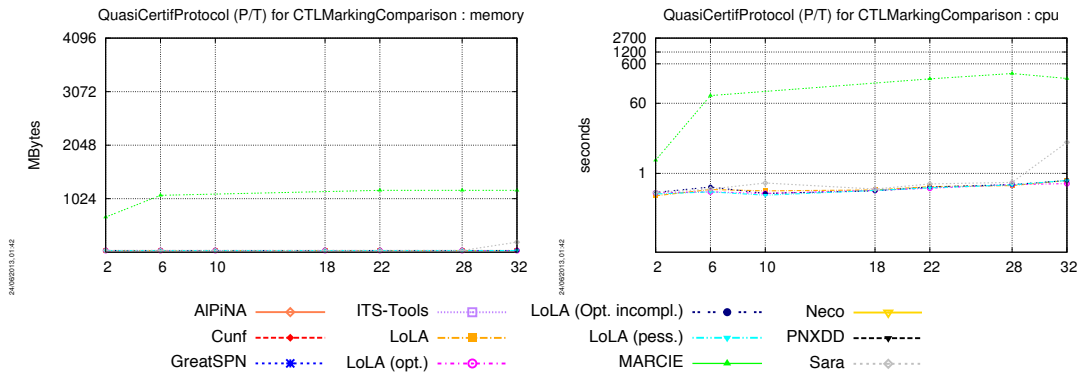


HouseConstruction (P/T) No instance of this model could be computed for the **CTLMarkingComparison** examination.

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.

Instances	CSRepetitions (colored)									
	GreatSPN	LoLA	LoLa opt	LoLa opt	LoLa opt inc	LoLa pess	Marcie	Sara		
02	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
03	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
04	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
05	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
07	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	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-	FFFTIFFF	-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	nf	nf	
015	nf	nf	nf	nf	nf	nf	nf	nf	nf	
020	nf	nf	nf	nf	nf	nf	nf	nf	nf	
050	nf	nf	nf	nf	nf	nf	nf	nf	nf	
100	nf	nf	nf	nf	nf	nf	nf	nf	nf	
200	nf	nf	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	nc	nc	
3	nc	nc	nc	nc	nc	nc	nc	nc	nc	
4	nc	nc	nc	nc	nc	nc	nc	nc	nc	
5	nc	nc	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	nc	nc	
10	nc	nc	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	FFFFFFF	to			
10	nc	cc	cc	cc	cc	FFFFFFF	to			
Echo (P/T)										
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa	pess	Marcie	Sara	
d02r09	nf	nf	nf	nf	nf	nf	nf	nf	nf	
d02r11	nf	nf	nf	nf	nf	nf	nf	nf	nf	
d02r15	nf	nf	nf	nf	nf	nf	nf	nf	nf	
d02r19	nf	nf	nf	nf	nf	nf	nf	nf	nf	
d03r03	nf	nf	nf	nf	nf	nf	nf	nf	nf	
d03r05	nf	nf	nf	nf	nf	nf	nf	nf	nf	
d03r07	nf	nf	nf	nf	nf	nf	nf	nf	nf	
d04r03	nf	nf	nf	nf	nf	nf	nf	nf	nf	
d05r03	nf	nf	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	nf	nf	
020	nf	nf	nf	nf	nf	nf	nf	nf	nf	
050	nf	nf	nf	nf	nf	nf	nf	nf	nf	
100	nf	nf	nf	nf	nf	nf	nf	nf	nf	
200	nf	nf	nf	nf	nf	nf	nf	nf	nf	
500	nf	nf	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	nf	nf	
005	nf	nf	nf	nf	nf	nf	nf	nf	nf	
010	nf	nf	nf	nf	nf	nf	nf	nf	nf	
020	nf	nf	nf	nf	nf	nf	nf	nf	nf	
050	nf	nf	nf	nf	nf	nf	nf	nf	nf	
100	nf	nf	nf	nf	nf	nf	nf	nf	nf	
200	nf	nf	nf	nf	nf	nf	nf	nf	nf	
500	nf	nf	nf	nf	nf	nf	nf	nf	nf	
GlobalResAlloc (colored)										

Instances	GreatSPN	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
GlobalResAlloc (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	nf
0010	nf	nf	nf	nf	nf	nf	nf	nf
0020	nf	nf	nf	nf	nf	nf	nf	nf
0050	nf	nf	nf	nf	nf	nf	nf	nf
0100	nf	nf	nf	nf	nf	nf	nf	nf
0200	nf	nf	nf	nf	nf	nf	nf	nf
0500	nf	nf	nf	nf	nf	nf	nf	nf
1000	nf	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	nc
3	nc	nc	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
LamportFastMutEx (P/T)								
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
2	nc	cc	cc	cc	cc	cc	cc	FF-FF-T
3	nc	cc	cc	cc	cc	cc	cc	-FT-TFT
4	nc	cc	cc	cc	cc	cc	FFFFFFF	-TT-FT-
5	nc	cc	cc	cc	cc	cc	to	T-TT-F-
6	nc	cc	cc	cc	cc	cc	cc	-T--TFT
7	nc	cc	cc	cc	cc	cc	to	T-T-T-T
8	nc	cc	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	nf
020	nf	nf	nf	nf	nf	nf	nf	nf
040	nf	nf	nf	nf	nf	nf	nf	nf
080	nf	nf	nf	nf	nf	nf	nf	nf
160	nf	nf	nf	nf	nf	nf	nf	nf
320	nf	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	nc
3	nc	nc	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	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
2	nc	-T-TT-F-	-T-TT-F-	--TT-F-	-T-TT-F-	FFFFFFF	-T-FF-F-	

3	nc	TFFF-F-	TFFF-F-	cc	TFFF-F-	FFFFFFF	TFFF-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	nc
02	nc	nc	nc	nc	nc	nc	nc	nc
05	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
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	FTTFTTT	-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	nc
3	nc	nc	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
Peterson (P/T)								
Instances	GreatSPN	LoLa	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
2	nc	cc	cc	cc	cc	FFFFFFF	cc	
3	nc	FT---	FT---	-T---	FT---	cc	FF---	
4	nc	---T-	---T-	to	to	to	-TFTF-	
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	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	LoLa	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
000005	?????FFF	FFFT--	FFFT--	FFFT--	FFFT--	FFFTFFF	FFTF--	
000010	cc	--F-FTT	--F-FTT	--F-T-	--F-FTT	FFFTFFF	to	
000020	cc	-F---	-F---	-F---	to	FFFTFFF	-FF-T--	
000050	cc	--T-FF-	--T-FF-	--T-FF-	to	FFFTFFF	F-T-FF-	
000100	cc	--F--	--F--	--F--	to	FFFTFFF	--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	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	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
03	cc	F-F-TFF	F-F-TFF	---F-	F-F-TFF	FFTTTFFF	-T-TFF	
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	nf	
Railroad (P/T)								
Instances	GreatSPN	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
RessAllocation (P/T)								
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
R002C002	nf	nf	nf	nf	nf	nf	nf	nf
R003C002	nf	nf	nf	nf	nf	nf	nf	nf
R003C003	nf	nf	nf	nf	nf	nf	nf	nf
R003C005	nf	nf	nf	nf	nf	nf	nf	nf
R003C010	nf	nf	nf	nf	nf	nf	nf	nf
R003C015	nf	nf	nf	nf	nf	nf	nf	nf
R003C020	nf	nf	nf	nf	nf	nf	nf	nf
R003C050	nf	nf	nf	nf	nf	nf	nf	nf
R003C100	nf	nf	nf	nf	nf	nf	nf	nf
R005C002	nf	nf	nf	nf	nf	nf	nf	nf
R010C002	nf	nf	nf	nf	nf	nf	nf	nf
R015C002	nf	nf	nf	nf	nf	nf	nf	nf
R020C002	nf	nf	nf	nf	nf	nf	nf	nf
R050C002	nf	nf	nf	nf	nf	nf	nf	nf
R100C002	nf	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	nf
RwMutex (P/T)								
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
r0010w0010	nf	nf	nf	nf	nf	nf	nf	nf
r0010w0020	nf	nf	nf	nf	nf	nf	nf	nf
r0010w0050	nf	nf	nf	nf	nf	nf	nf	nf
r0010w0100	nf	nf	nf	nf	nf	nf	nf	nf
r0010w0500	nf	nf	nf	nf	nf	nf	nf	nf
r0010w1000	nf	nf	nf	nf	nf	nf	nf	nf
r0010w2000	nf	nf	nf	nf	nf	nf	nf	nf
r0020w0010	nf	nf	nf	nf	nf	nf	nf	nf
r0100w0010	nf	nf	nf	nf	nf	nf	nf	nf
r0500w0010	nf	nf	nf	nf	nf	nf	nf	nf

r1000w0010	nf	nf	nf	nf	nf	nf	nf	nf
r2000w0010	nf	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	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	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--	FFFFFFF	to	
10	nc	to	to	to	to	FFFFFFF	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	FFFFFFF	--F--T	
010	cc	FTTT-T-F	FTTT-T-F	---T-F	FTTT-T-F	FFFFFFF	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 LoLa	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			
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	FFFFFFF	---FF-	
06	cc	cc		cc			cc	FFFFFFF	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
GlobalResAlloc (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	0
best	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0
GlobalResAlloc (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	peSS	Marcie Sara
1st instance	0	1	1		1		1	1
instances	0	1	1		1		1	1
max reached	0	0	0		0		2	0
best	0	0	0		0		2	0
subtotal	0	2	2		2		6	2
Kanban (P/T)								
	GreatSPN	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
LamportFastMutEx (Colored)								
	GreatSPN	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
LamportFastMutEx (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	peSS	Marcie Sara
1st instance	0	0	0		0		0	1
instances	0	0	0		0		0	7
max reached	0	0	0		0		0	2
best	0	0	0		0		0	2
subtotal	0	0	0		0		0	12
MAPK (P/T)								
	GreatSPN	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
NeoElection (Colored)								
	GreatSPN	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
NeoElection (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	peSS	Marcie Sara
1st instance	0	1	1		1		1	1
instances	0	4	4		1		2	6
max reached	0	0	0		0		0	2
best	0	0	0		0		0	2
subtotal	0	5	5		2		3	11
PermAdmissibility (Colored)								
	GreatSPN	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
PermAdmissibility (P/T)								

	GreatSPN	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
1st instance	1	1	1	1	1	1	1	1
instances	4	6	6	3	3	3	1	6
max reached	2	2	2	0	0	0	0	2
best	2	2	2	0	0	0	0	2
subtotal	9	11	11	4	4	4	2	11
Peterson (Colored)								
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
Peterson (P/T)								
1st instance	0	1	1	1	1	1	1	1
instances	0	3	3	1	1	1	1	4
max reached	0	0	0	0	0	0	0	2
best	0	0	0	0	0	0	0	2
subtotal	0	4	4	2	2	2	2	9
Philosophers (Colored)								
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)								
1st instance	1	1	1	1	1	1	1	1
instances	1	11	11	11	11	2	7	7
max reached	0	2	2	2	2	0	0	0
best	0	2	2	2	2	0	0	0
subtotal	2	16	16	16	16	3	8	8
PhilosophersDyn (Colored)								
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)								
1st instance	0	1	1	1	1	1	1	1
instances	0	2	2	1	1	2	1	1
max reached	0	0	0	0	0	0	0	0
best	0	2	2	0	0	2	0	0
subtotal	0	5	5	2	2	5	2	2
Planning (P/T)								
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)								
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			
RessAllocation (P/T)											
	GreatSPN	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	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	pass	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	pass	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	pass	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	pass	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	pass	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	pass	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	pass	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	pass	Marcie	Sara

1st instance	1	1	1	1	1	1	1
instances	1	3	3	3	3	3	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	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	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
IBMB2S565S3960 (P/T)									
	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
QuasiCertifProtocol (Colored)									
	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
QuasiCertifProtocol (P/T)									
	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	2	7	
max reached	0	0	0	0	0	0	0	2	
best	0	0	0	0	0	0	0	2	
subtotal	0	0	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	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

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 87 points	LoLA 71 points	LoLa opt 71 points

For “Surprise” Models

1	2
	
Sara 12 points	Marcie 3 points

Global

1	2	2
		
Sara 111 points	LoLA 71 points	LoLa opt 71 points

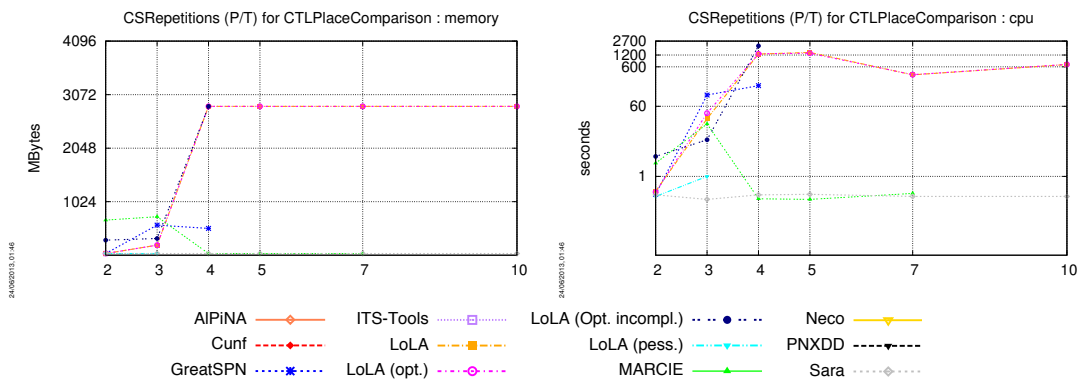
16 The CTLPlaceComparison Examination

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.

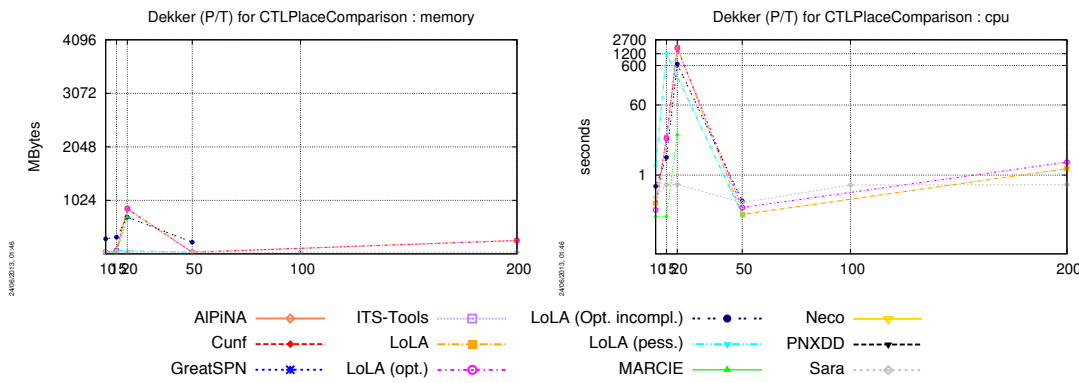
16.1 Handling of Models by Tools

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).



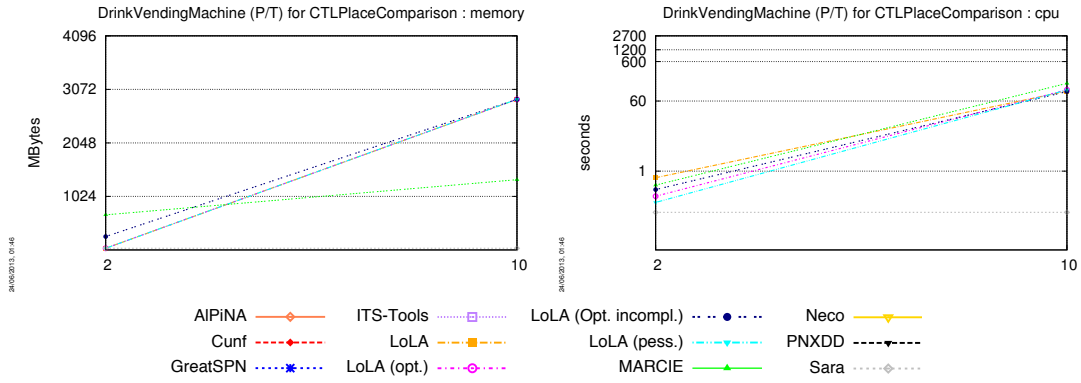
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



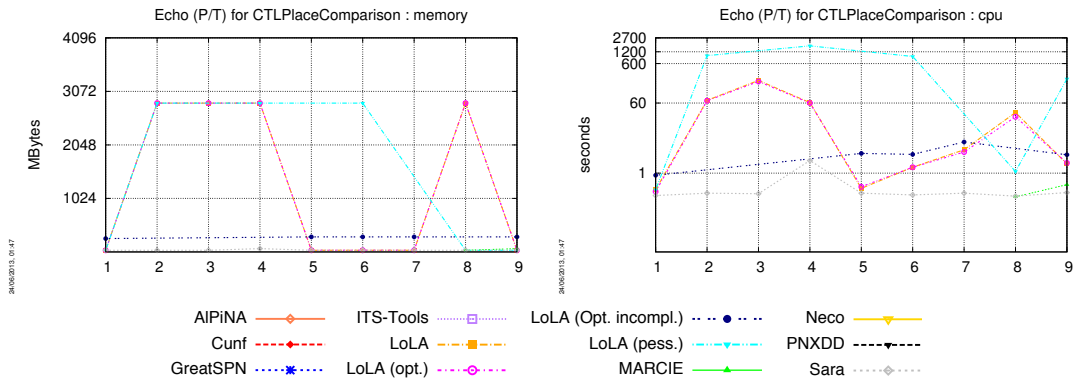
DotAndBoxes (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

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

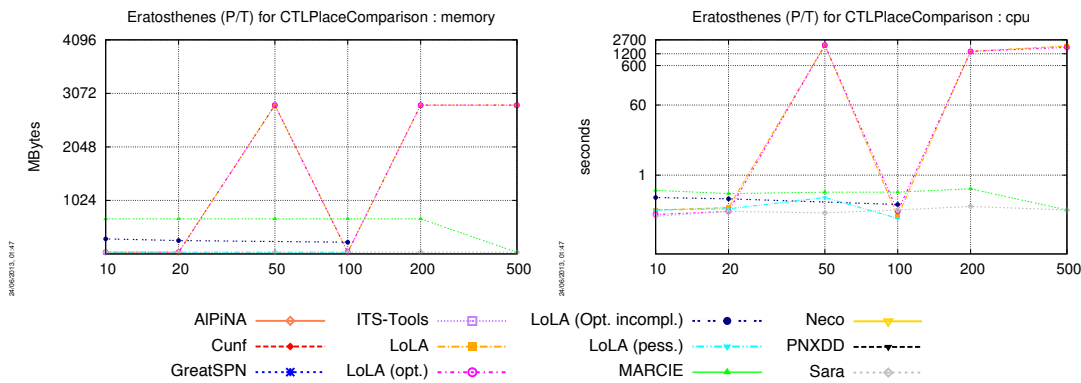
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



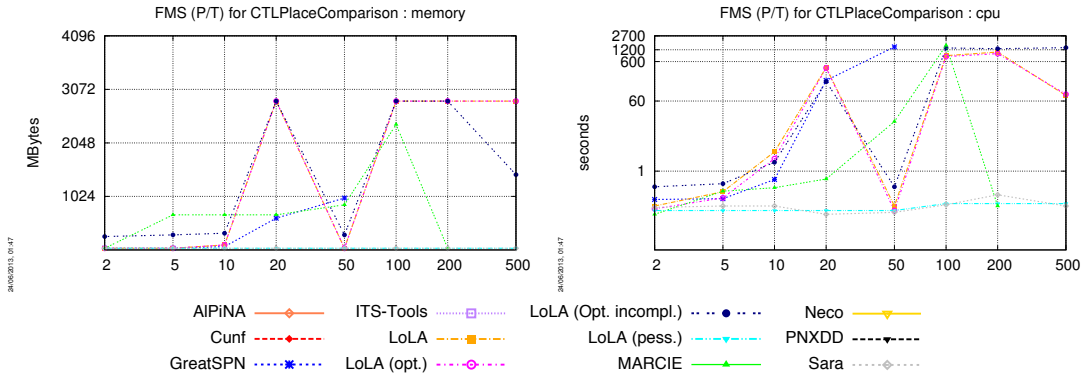
Echo (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

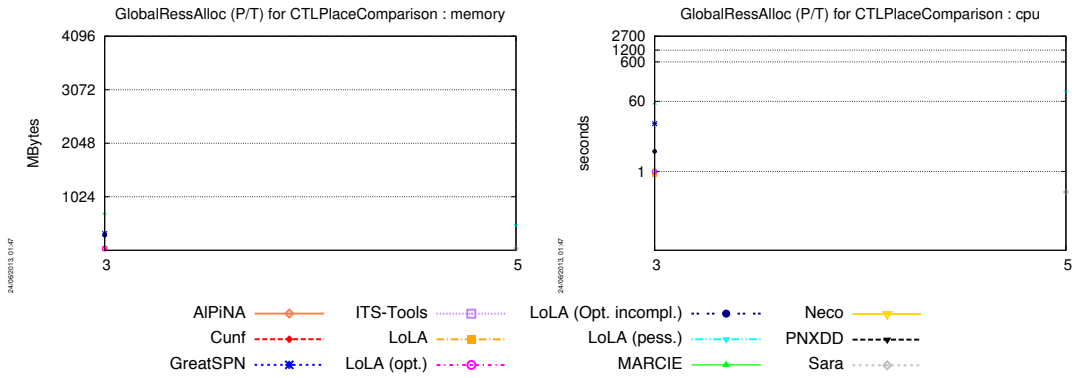


FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

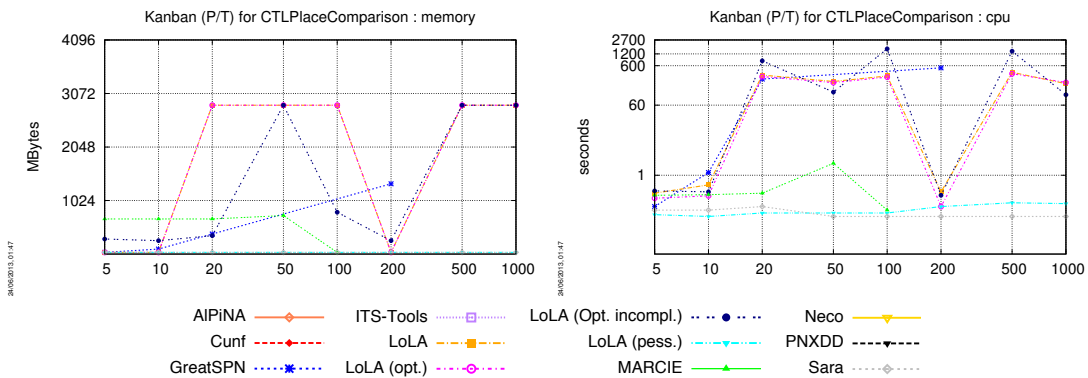


GlobalRessAlloc (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

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

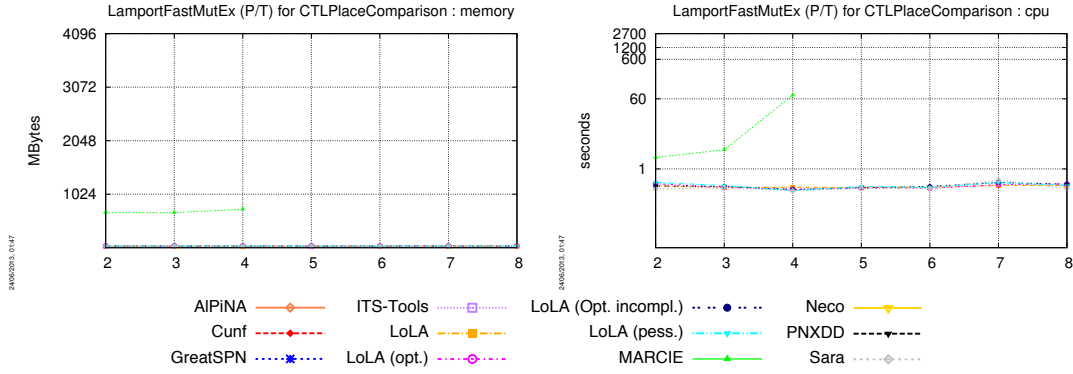


Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

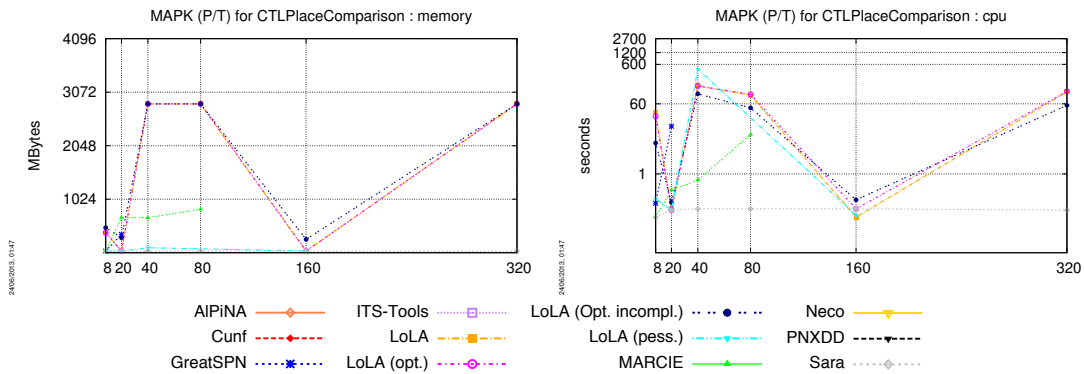


LamportFastMutEx (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

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

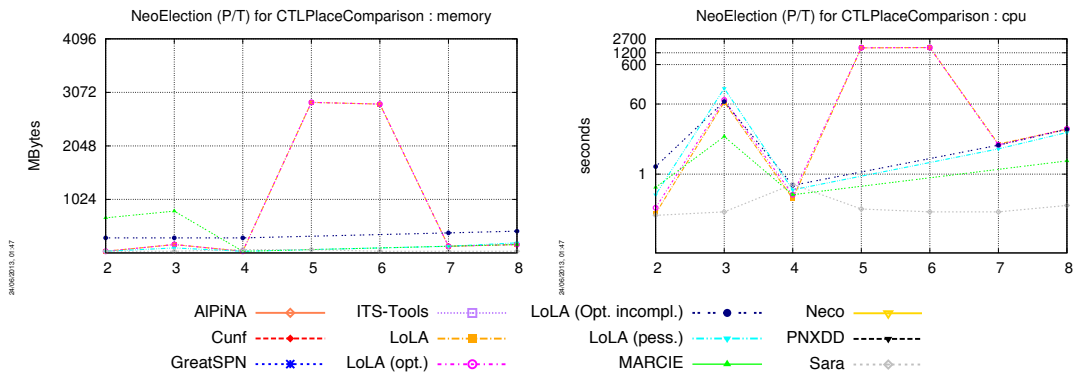


MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



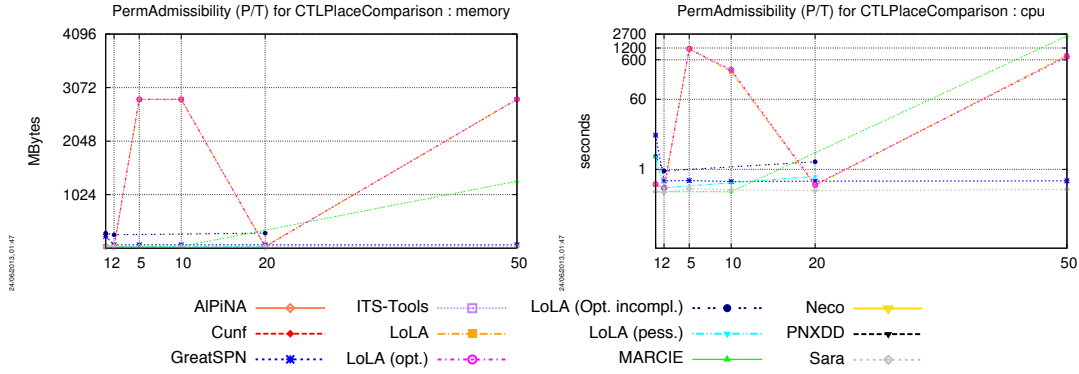
NeoElection (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

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



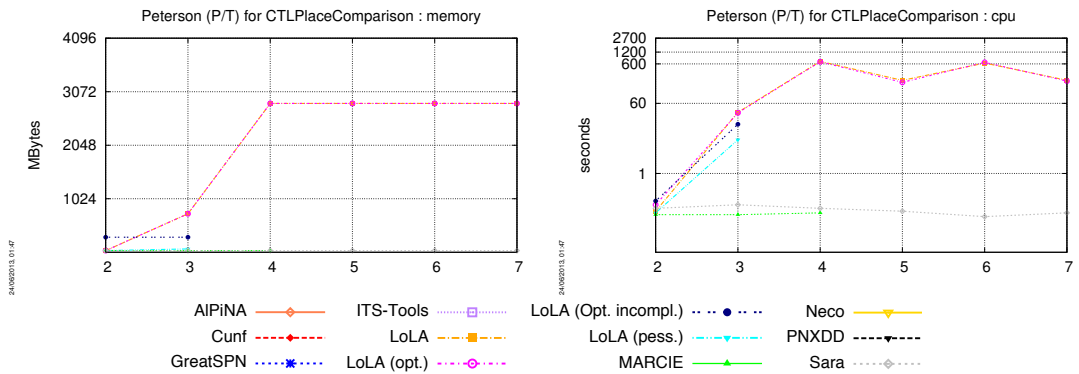
PermAdmissibility (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

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



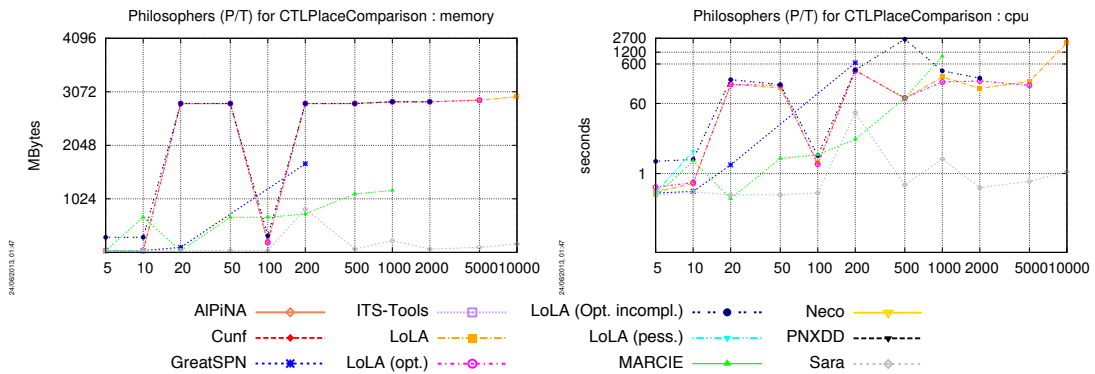
Peterson (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

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



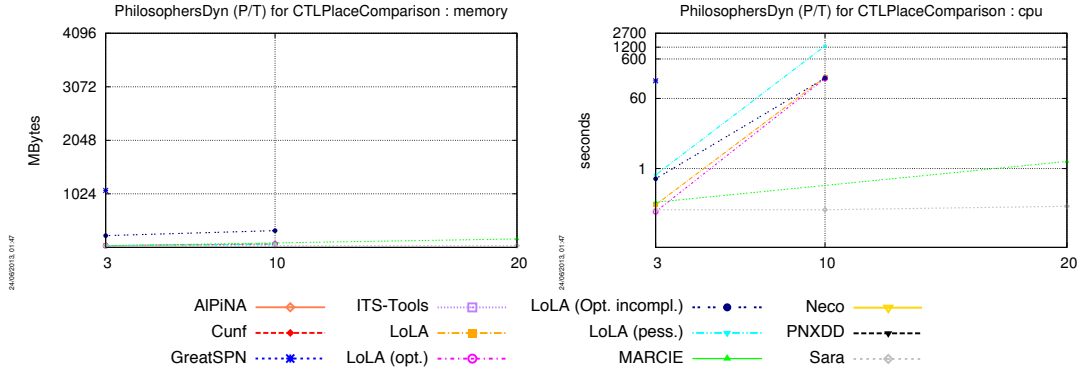
Philosophers (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

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



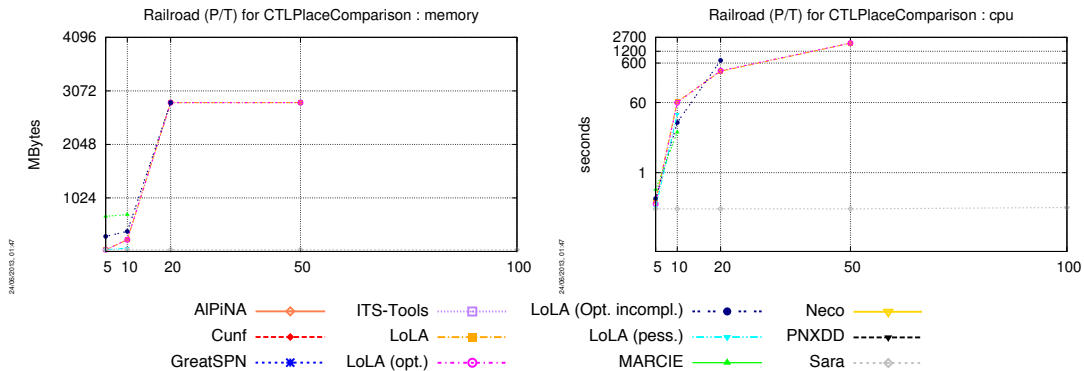
PhilosophersDyn (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

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

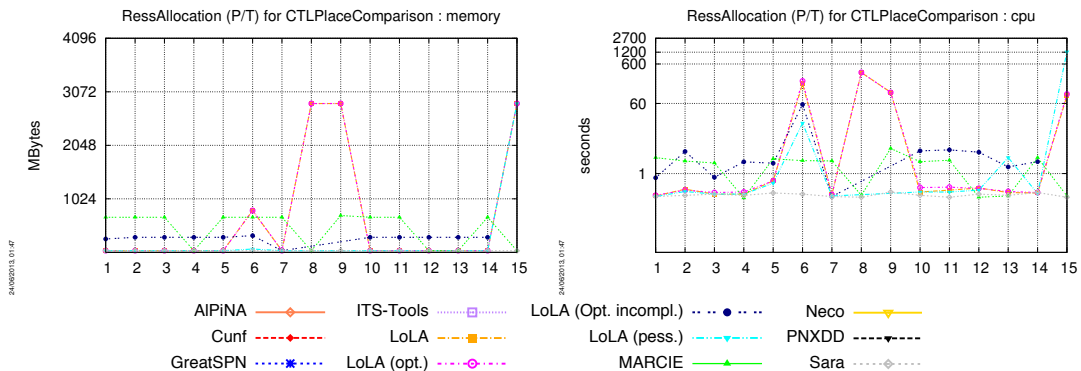


Planning (P/T) No instance of this model could be computed for the **CTLPlaceComparison** examination.

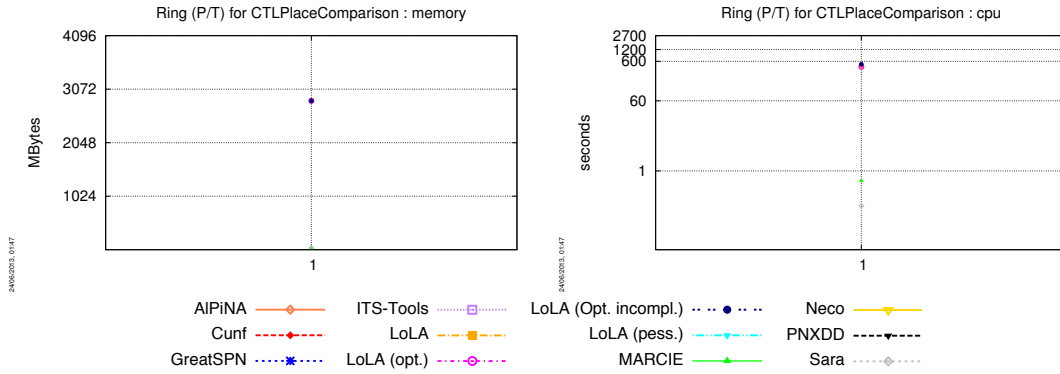
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



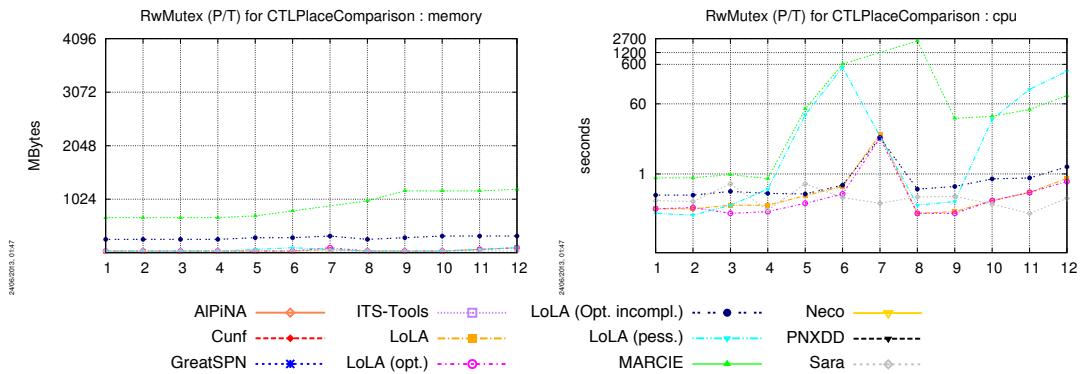
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

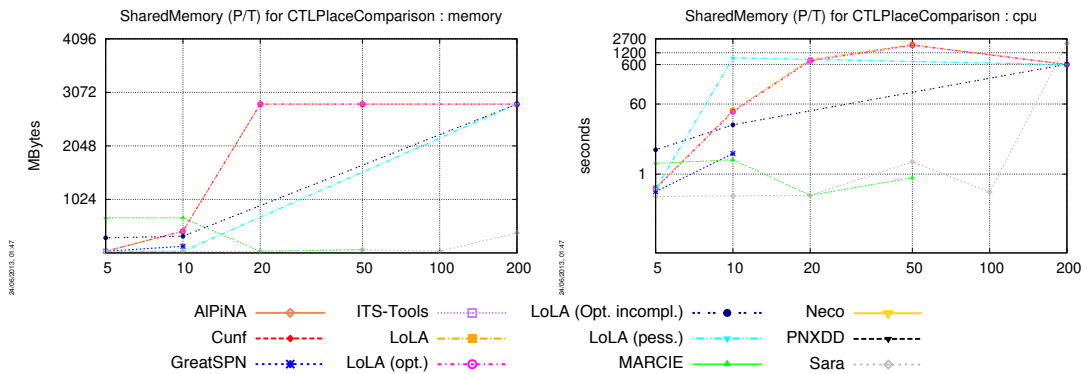


RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



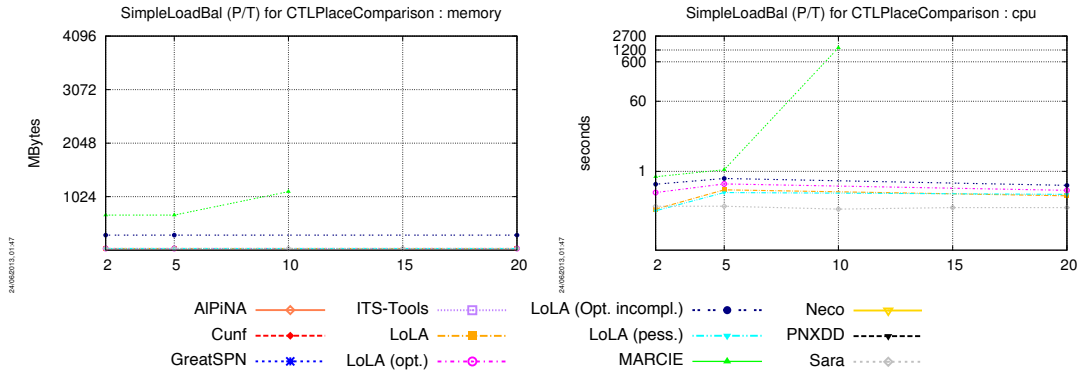
SharedMemory (colored) No instance of this model could be computed for the CTLPlaceComparison examination.

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.

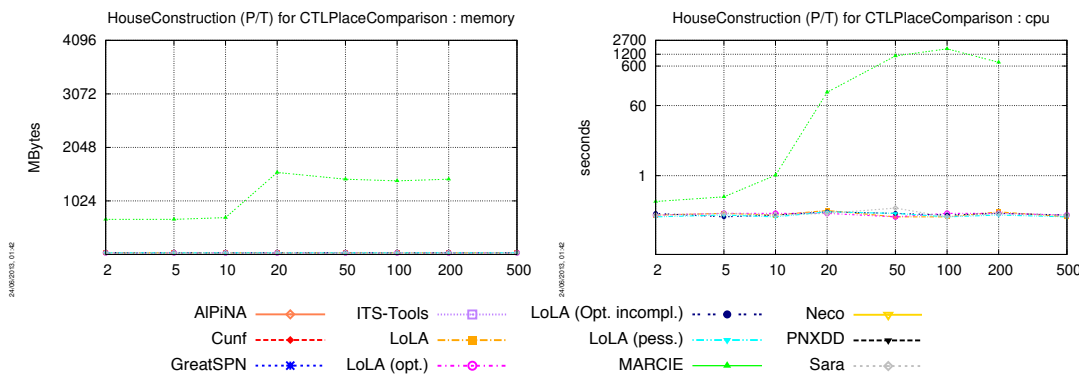
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



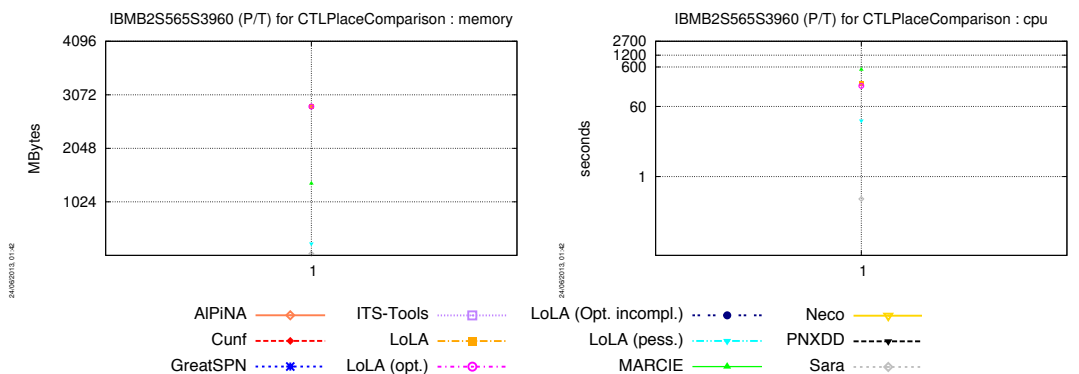
TokenRing (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

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).

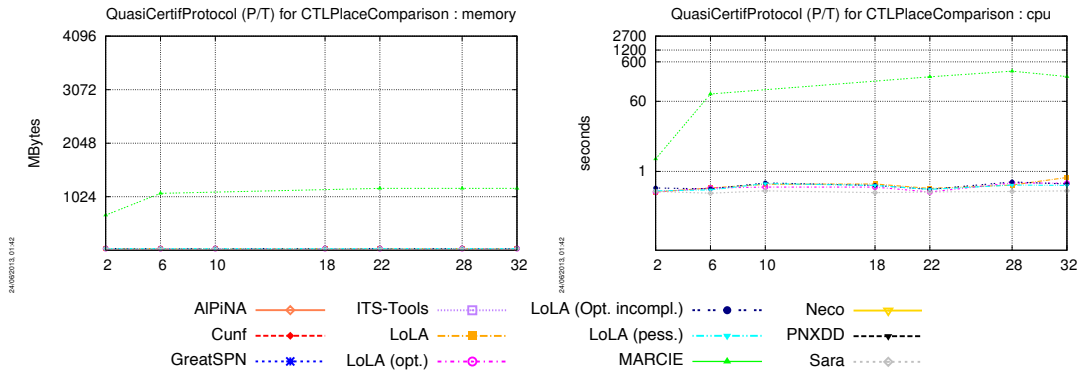


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

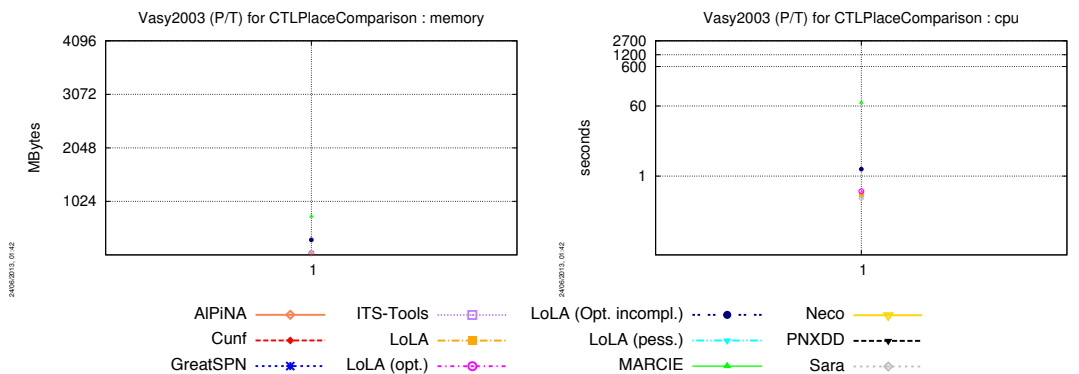


QuasiCertifProtocol (colored) No instance of this model could be computed for the **CTLPlaceComparison** examination.

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 “Suprise” 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 LoLa	inc LoLa	pess	Marcie	Sara
02	nc	nc	nc		nc	nc	nc	nc	nc
03	nc	nc	nc		nc	nc	nc	nc	nc
04	nc	nc	nc		nc	nc	nc	nc	nc
05	nc	nc	nc		nc	nc	nc	nc	nc
07	nc	nc	nc		nc	nc	nc	nc	nc
10	nc	nc	nc		nc	nc	nc	nc	nc
CSRepetitions (P/T)									
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
02	FFFFFFF	TFT-F--	TFT-F--		-F-F--	--F--	FFFFFFF	cc	
03	FTFTFFFF	-T---	-T---		cc	-T---	FFFFFFF	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 LoLa	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	FFFFFFF	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 LoLa	inc LoLa	pess	Marcie	Sara
2	nc	nc	nc		nc	nc	nc	nc	nc
3	nc	nc	nc		nc	nc	nc	nc	nc
4	nc	nc	nc		nc	nc	nc	nc	nc
5	nc	nc	nc		nc	nc	nc	nc	nc
DrinkVendingMachine (colored)									
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
02	nc	nc	nc		nc	nc	nc	nc	nc
10	nc	nc	nc		nc	nc	nc	nc	nc
DrinkVendingMachine (P/T)									
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
02	nc	TTTT--	TTTT--		cc	TTTT--	FFFFFFF	cc	
10	nc	cc	cc		cc	cc	FFFFFFF	cc	
Echo (P/T)									
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	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 LoLa	inc LoLa	pess	Marcie	Sara
010	nc	F---F	F---F		cc	cc	FFFFFFF	cc	
020	nc	-T--F-	-T--F-		---F-	---F-	FFFFFFF	---T-	
050	nc	FTF---	FTF---		to	FTF-T-	FFFFFFF	---T-	
100	nc	----F	----F		----F	----F	FFFFFFF	cc	
200	nc	---T-	---T-		to	to	FFFFFFF	---TF-	
500	nc	-TT-TFF	-TT-TFF		to	to	cc	cc	
FMS (P/T)									
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie	Sara
002	FTFT?FFT	-T-T--T	-T-T--T		-T-T--T	--T--	cc	cc	

005	FTFFTTT	--T-F-F	--T-F-F	cc	cc	FFFFFFF	cc	
010	FFFTTTF	TFTT-TT-	TFTT-TT-	-F-T-TT-	-F-T-T-	FFFFFFF	cc	
020	FFFFTTF	T-F--T	T-F--T	--F--	--F--	FFFTFFF	cc	
050	FTFFFTF	FT--T-	FT--T-	FT--T-	FT--T-	FFTTTFF	---F-	
100	mp	---TFT	---TFT	---TFT	---TFT	FFFFFFF	cc	
200	to	----F	----F	----F	cc	cc	----T	
500	to	cc	cc	cc	cc	to	cc	
GlobalResAlloc (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	
GlobalResAlloc (P/T)								
Instances	GreatSPN	LoLa	LoLa	opt LoLa	opt inc LoLa	pess Marcie	Sara	
03	FTFFFTF	--F-TT-	--F-TT-	--F-TT-	to	FFFFFFF	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	FTFTTTF	T--T-F	T--T-F	---T-F	---T-F	FFFTFFF	cc	
0010	FTFFFTF	--F-TF-	--F-TF-	--F-TF-	--F-F-	FFFFFFF	cc	
0020	TFTFTTF	---T-F	---T-F	---T-F	---T-F	FFFTFFF	cc	
0050	to	---T-	---T-	---T-	cc	FFFFFFF	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	FFFTFFF	cc	
3	nc	cc	cc	cc	cc	FFFFFFF	cc	
4	nc	cc	cc	cc	cc	FFFTFFF	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	TFT?FTF	-T--TF	-T--TF	---TF	---TF	cc	---F-	
020	FFTTTTF	---T-	---T-	---T-	---T-	FFTTTFF	cc	
040	to	-T-T-F-	-T-T-F-	-T-T-F-	--T-F-	FFTTFFF	cc	
080	to	FTF---	FTF---	FTF---	to	FFFFFFF	cc	
160	to	---TT-	---TT-	---TT-	---TT-	to	cc	
320	to	--F-F-	--F-F-	--F-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	-TF-T-	-TF-T-	-T---	-TF---	FFFFFFF	cc
3	nc	-TF-FTT	-TF-FTT	---T-	-TF-FTT	FFFFFFF	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	TFFFTTF	---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	FTF???	-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	FFTTTTF	T-F-T-	T-F-T-	---T-	---T-	FFFFFFF	cc
000020	FFFF?FTT	---T-	---T-	---T-	to	cc	cc
000050	to	-F---	-F---	-F---	to	FFFFFFF	cc
000100	to	-FTF--	-FTF--	-FTF--	to	FFFFFFF	cc
000200	FFFTF	---T-	---T-	---T-	to	FFFFFFF	cc
000500	to	cc	cc	cc	to	FFFFFFF	cc
001000	mp	---T-	---T-	---T-	to	FFTTTFT	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	FFTT?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	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-	FFFFFFF	cc
010	nc	---T-T	---T-T	cc	cc	FFFFFFF	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
ResAllocation (P/T)							
Instances	GreatSPN	LoLA	LoLa opt	LoLa opt	inc LoLa	peSS	Marcie Sara
R002C002	nc	---T-	---T-	---T-	---T-	FFFFFFF	cc
R003C002	nc	FT-T-F-F	FT-T-F-F	-T-T-F-F	FT-T--F	FFFFFFF	---T-
R003C003	nc	-F---	-F---	cc	cc	FFFFFFF	cc
R003C005	nc	-F--TT	-F--TT	---TT	-F--TT	cc	cc
R003C010	nc	-T-T--	-T-T--	cc	cc	FFFFFFF	cc
R003C015	nc	-FT-F-	-FT-F-	--T-F-	--T-F-	FFFFFFF	cc
R003C020	nc	cc	cc	cc	cc	FFFFFFF	cc
R003C050	nc	cc	cc	to	to	cc	cc
R003C100	nc	----F	----F	to	to	FFFFFFF	cc
R005C002	nc	T-FF-F-T	T-FF-F-T	---F-T	---F-T	FFFFFFF	cc
R010C002	nc	-F-F-FTF	-F-F-FTF	-F-F--	-F-F--F	FFTTTTF	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-	FFFFFFF	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--	FFFFFFF	cc
r0010w0020	nc	--F-T-F	--F-T-F	--F-T-F	--F-T-	FFTTTTF	cc

r0010w0050	nc	-F-FFF	-F-FFF	---FFF	-F-FFF	FFFFFFF	cc	
r0010w0100	nc	F-F-T-T	F-F-T-T	cc	cc	FFFFFFF	cc	
r0010w0500	nc	-TT-F-	-TT-F-	-TT--	-TT-F-	FTTFFFF	cc	
r0010w1000	nc	-F-F-F-T	-F-F-F-T	-F-F-F-T	-F-F-F-T	FFFFFFF	cc	
r0010w2000	nc	-T--T-	-T--T-	cc	to	to	cc	
r0020w0010	nc	-FF--T-	-FF--T-	---T-	cc	FFFFFFF	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	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	LoLa	LoLa opt	LoLa opt	inc	LoLa pess	Marcie	Sara
000005	FFFFFFF	TF-T-TT-	TF-T-TT-	-F-T--	cc	FFFFFFF	cc	
000010	FTFTFTT	-FF--T	-FF--T	--F--T	--F--	FFFFFFF	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	nc
05	nc	nc	nc	nc	nc	nc	nc	nc
10	nc	nc	nc	nc	nc	nc	nc	nc
15	nc	nc	nc	nc	nc	nc	nc	nc
20	nc	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-	FTTFFFF	cc	
05	nc	-TT-T-	-TT-T-	--T-T-	-TT--	FFFFFFF	cc	
10	nc	to	to	to	to	FFFFFFF	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	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	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
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	FFFFFFF	cc
005	cc	cc		cc		cc	FFFFFFF	---F
010	cc	cc		cc		cc	FFFFFFF	cc
020	cc	cc		cc		cc	FFFFFFF	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	FFFTTFF	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	FFFFFFF	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	FFFFFFF	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	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
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	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	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	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	0
best	0	0	0	0	0	0	0	0
subtotal	0	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
instances	0	4	4		2		1	2
max reached	0	0	0		0		0	0
best	0	2	2		0		0	0
subtotal	0	7	7		3		2	3
RessAllocation (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	pess	Marcie Sara
1st instance	0	1	1		1		1	1
instances	0	12	12		9		9	10
max reached	0	0	0		0		0	0
best	0	2	2		2		2	2
subtotal	0	15	15		12		12	13
Ring (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	pess	Marcie Sara
1st instance	0	1	1		1		0	0
instances	0	1	1		1		0	0
max reached	0	2	2		2		0	0
best	0	2	2		2		0	0
subtotal	0	6	6		6		0	0
RwMutex (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	pess	Marcie Sara
1st instance	0	1	1		1		1	1
instances	0	12	12		10		7	7
max reached	0	2	2		2		0	0
best	0	2	2		2		0	0
subtotal	0	17	17		15		8	8
SharedMemory (Colored)								
	GreatSPN	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
SharedMemory (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	pess	Marcie Sara
1st instance	1	1	1		1		1	1
instances	2	2	2		2		1	2
max reached	0	0	0		0		0	0
best	0	0	0		0		0	0
subtotal	3	3	3		3		2	3
SimpleLoadBal (Colored)								
	GreatSPN	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
SimpleLoadBal (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	pess	Marcie Sara
1st instance	0	1	1		1		1	1
instances	0	3	3		3		3	3
max reached	0	2	2		2		2	0
best	0	2	2		2		2	0
subtotal	0	8	8		8		8	4
TokenRing (Colored)								

GreatSPN										
	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)										
	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										
Total Score	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Marcie	Sara
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 192 points	LoLa opt 182 points	LoLa opt inc 135 points

For “Surprise” Models

1	2	2	2
			
Marcie 22 points	LoLA 6 points	LoLa opt 6 points	LoLa opt inc 6 points

Global

1	2	3
		
LoLA 204 points	LoLa opt 199 points	LoLa opt inc 147 points

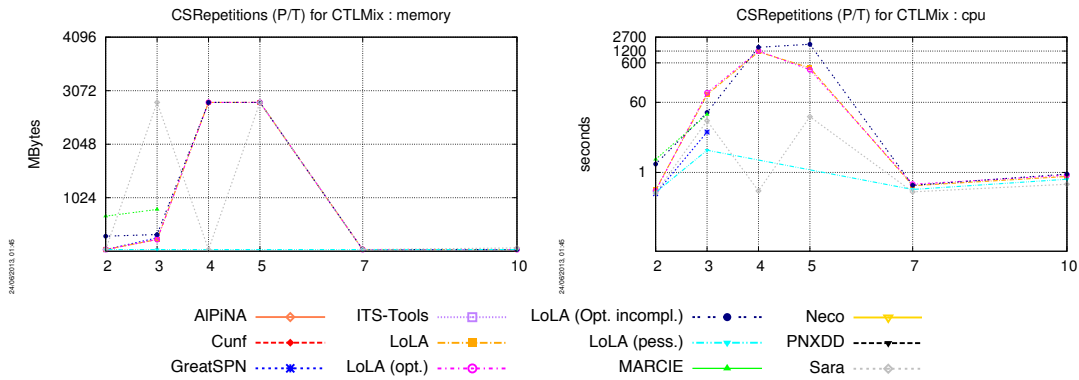
17 The CTLMix Examination

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.

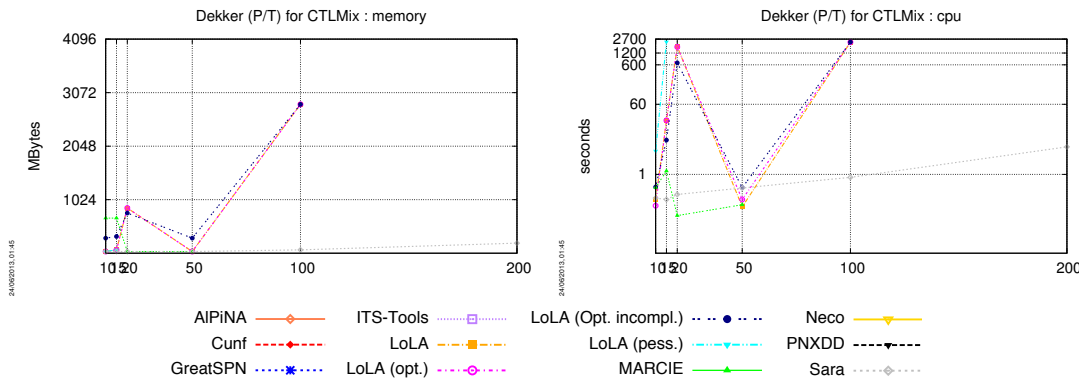
17.1 Handling of Models by Tools

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).



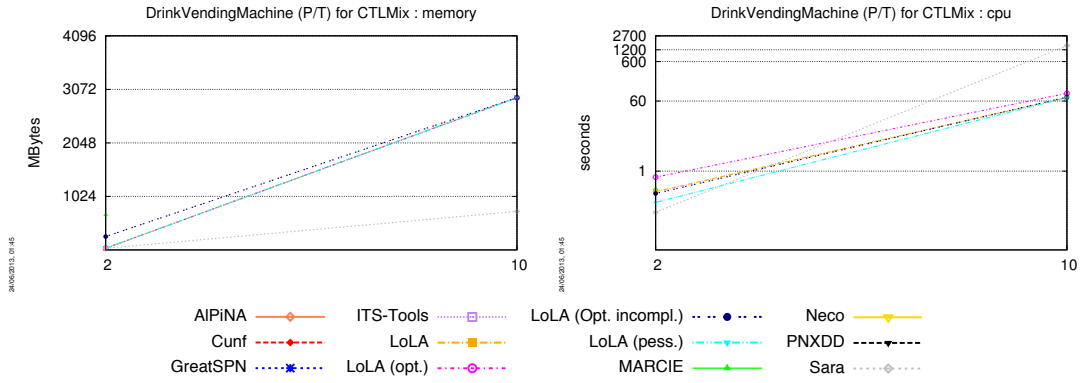
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



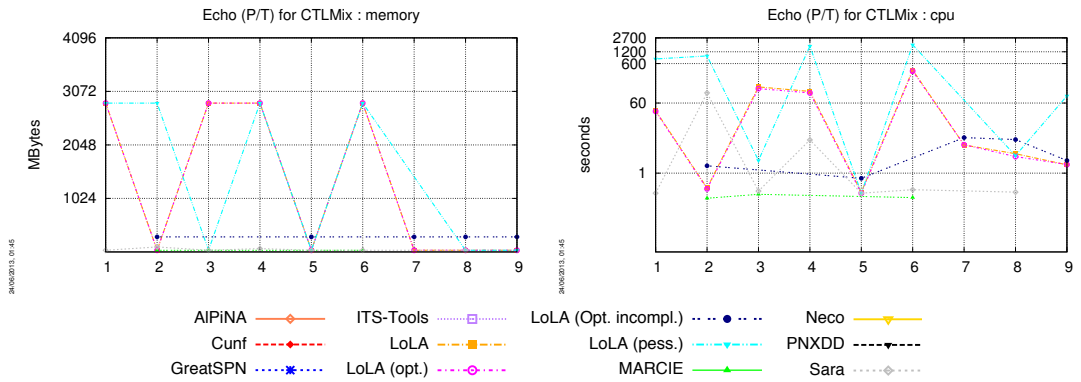
DotAndBoxes (colored) No instance of this model could be computed for the CTLMix examination.

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

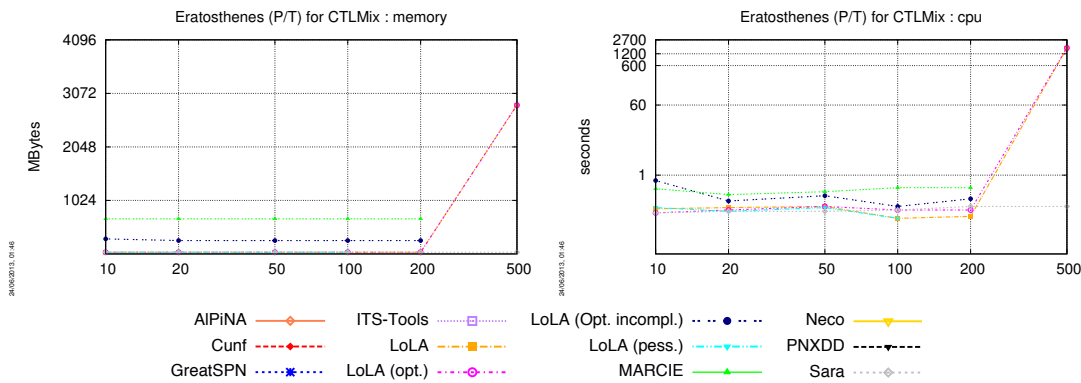
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



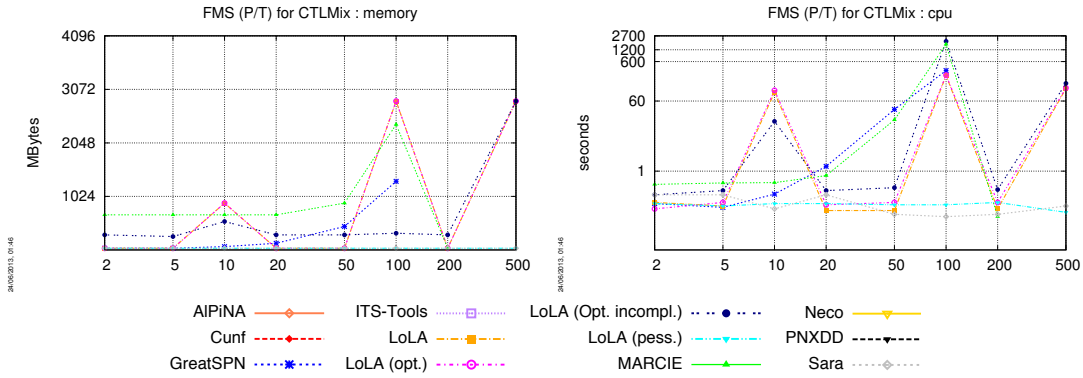
Echo (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

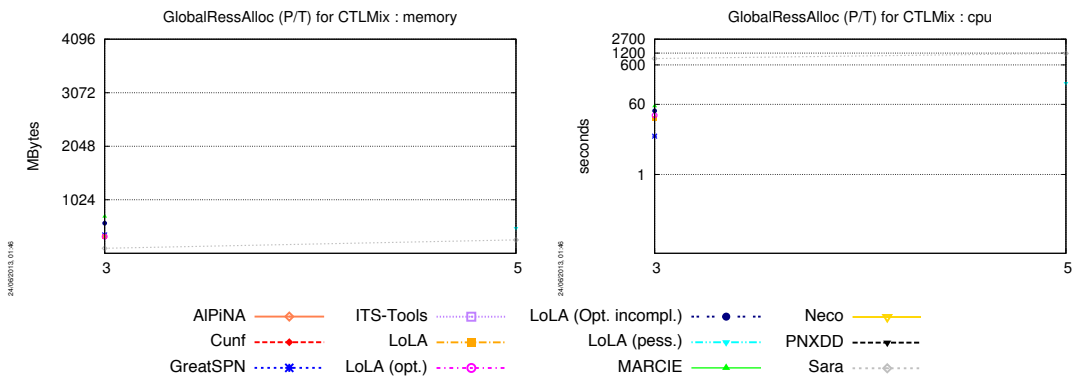


FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

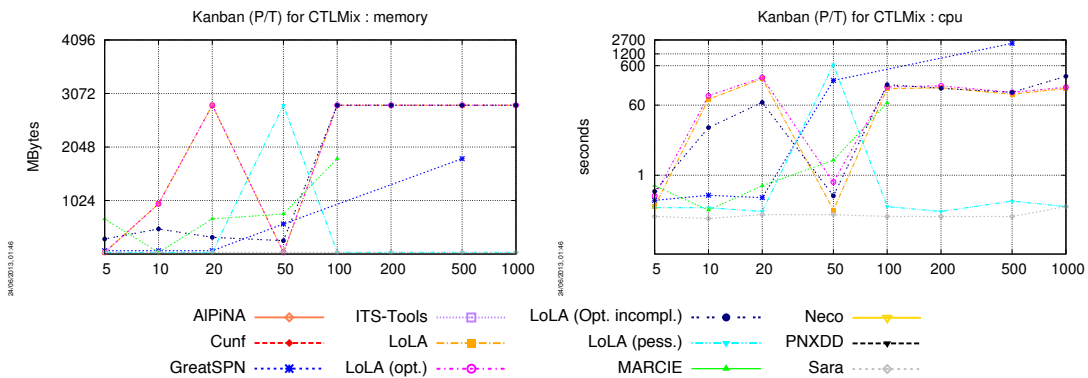


GlobalResAlloc (colored) No instance of this model could be computed for the **CTLMix** examination.

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

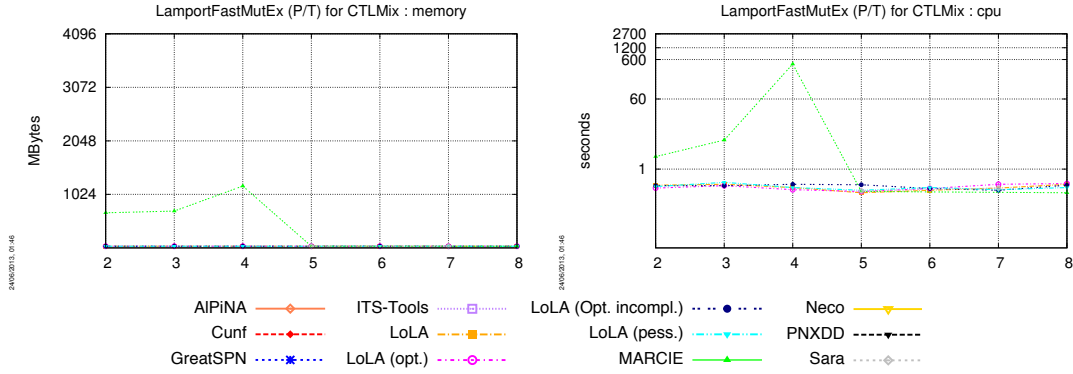


Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

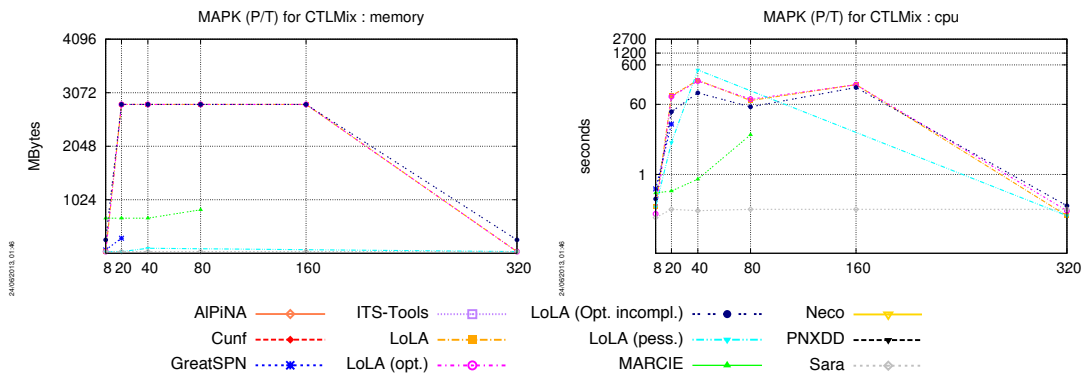


LamportFastMutEx (colored) No instance of this model could be computed for the **CTLMix** examination.

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

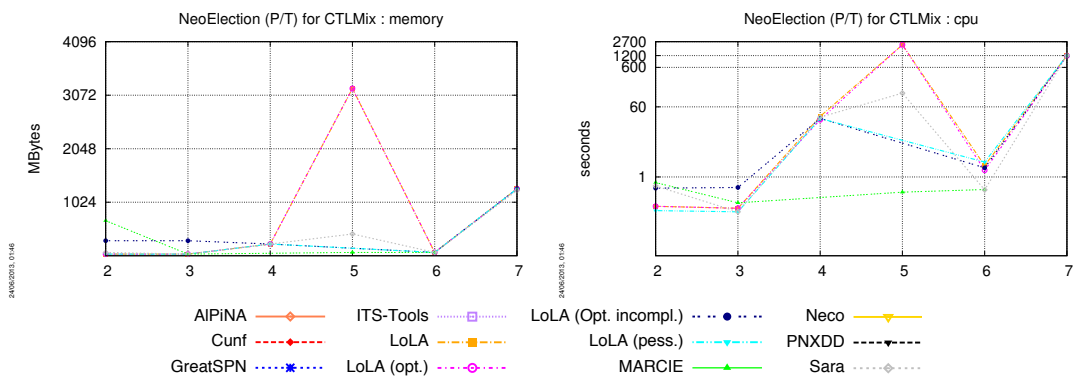


MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



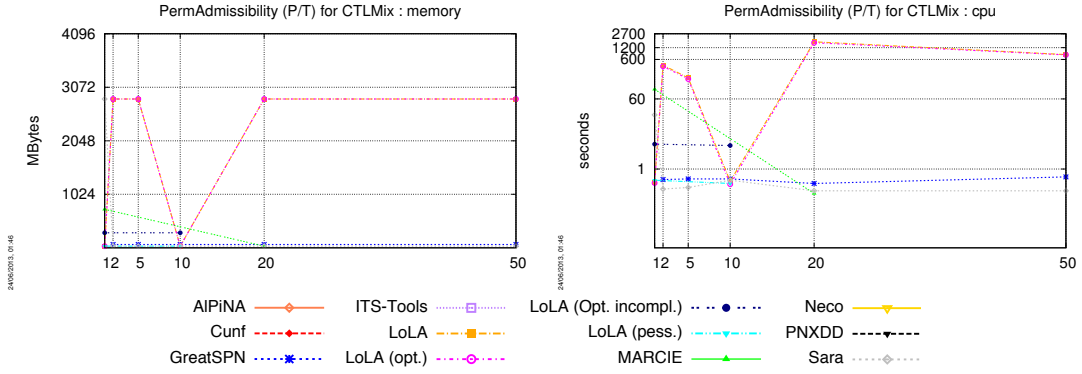
NeoElection (colored) No instance of this model could be computed for the **CTLMix** examination.

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



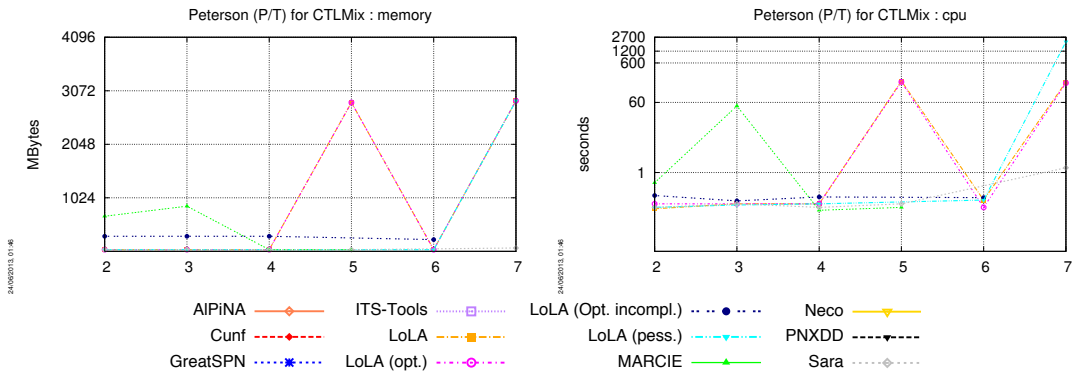
PermAdmissibility (colored) No instance of this model could be computed for the **CTLMix** examination.

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



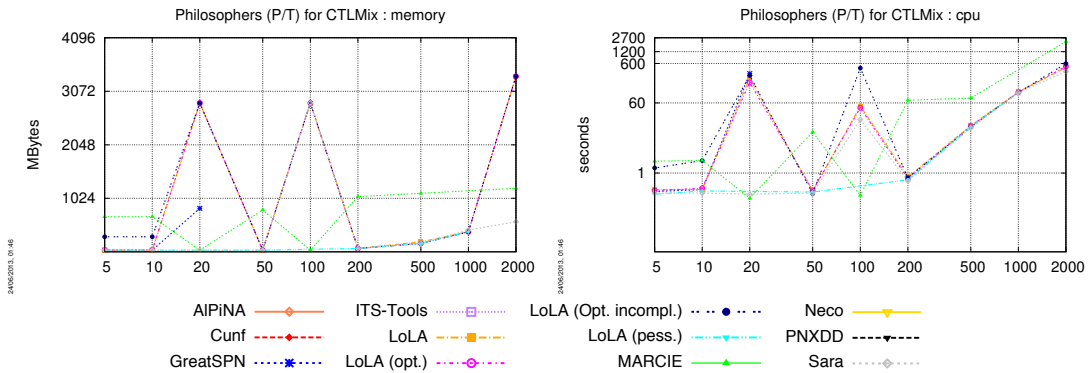
Peterson (colored) No instance of this model could be computed for the **CTLMix** examination.

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



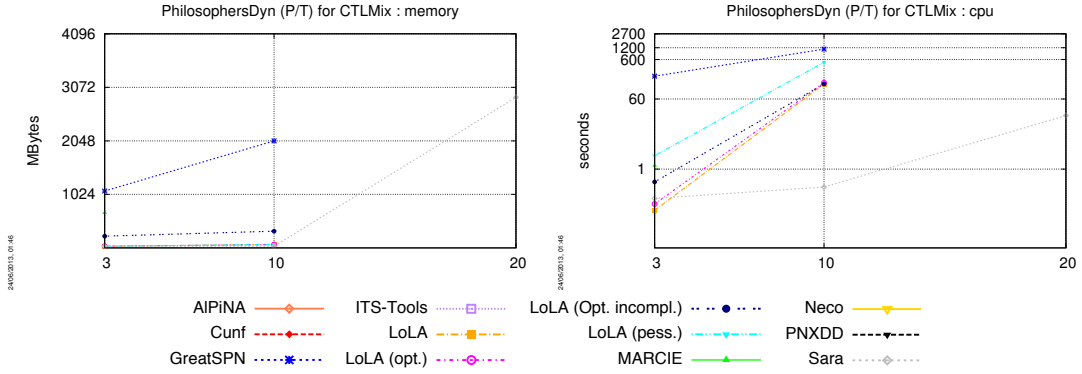
Philosophers (colored) No instance of this model could be computed for the **CTLMix** examination.

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



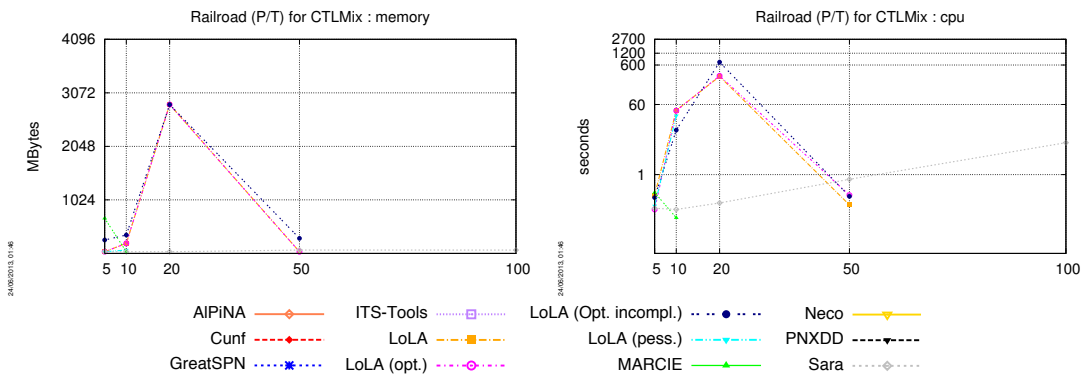
PhilosophersDyn (colored) No instance of this model could be computed for the **CTLMix** examination.

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

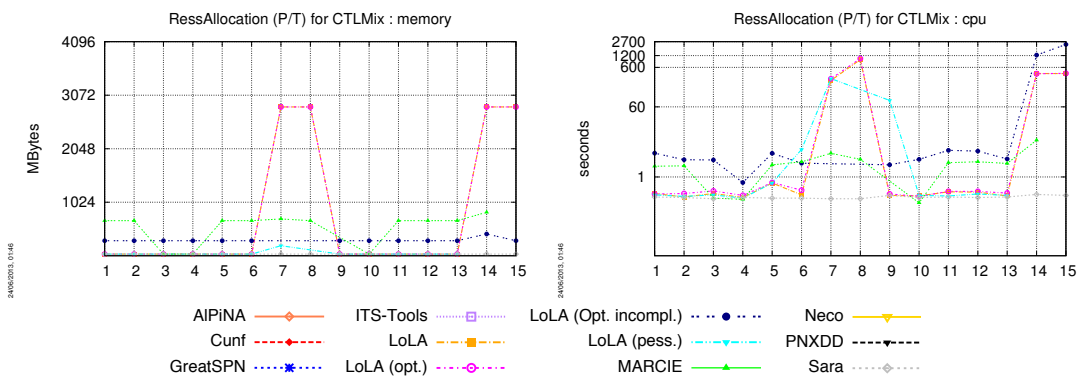


Planning (P/T) No instance of this model could be computed for the CTLMix examination.

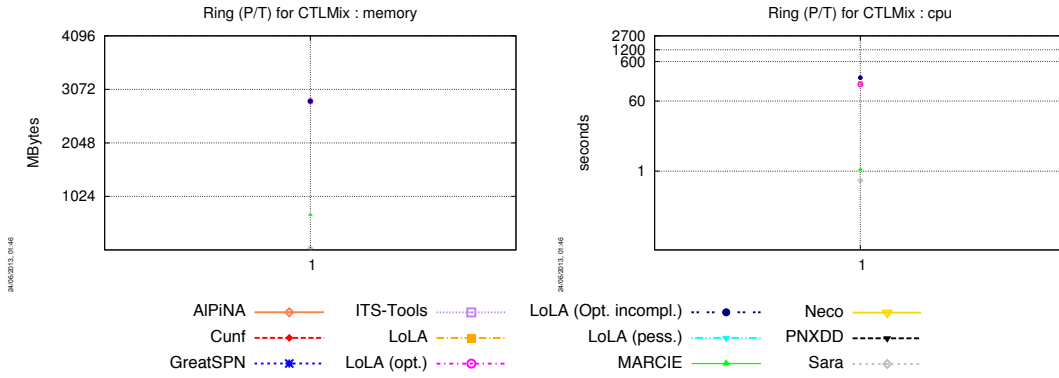
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



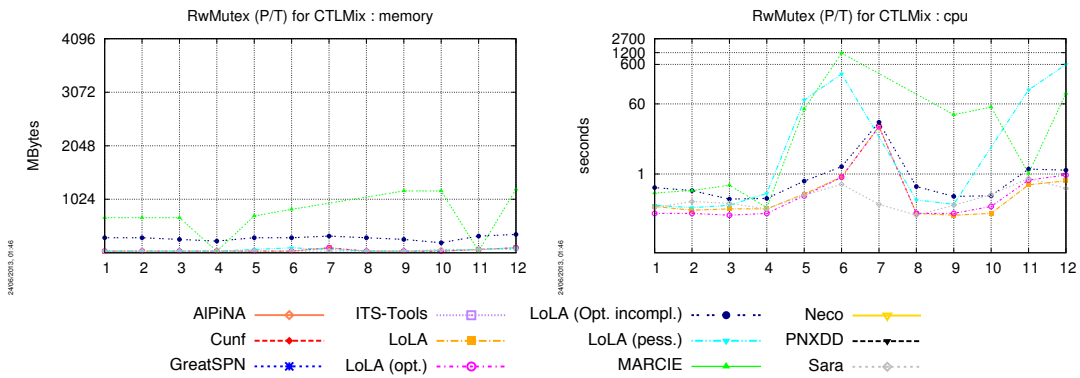
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

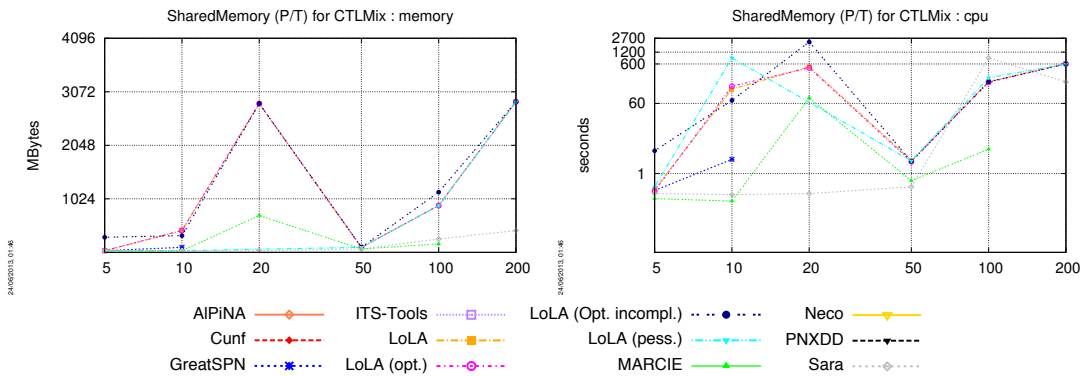


RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



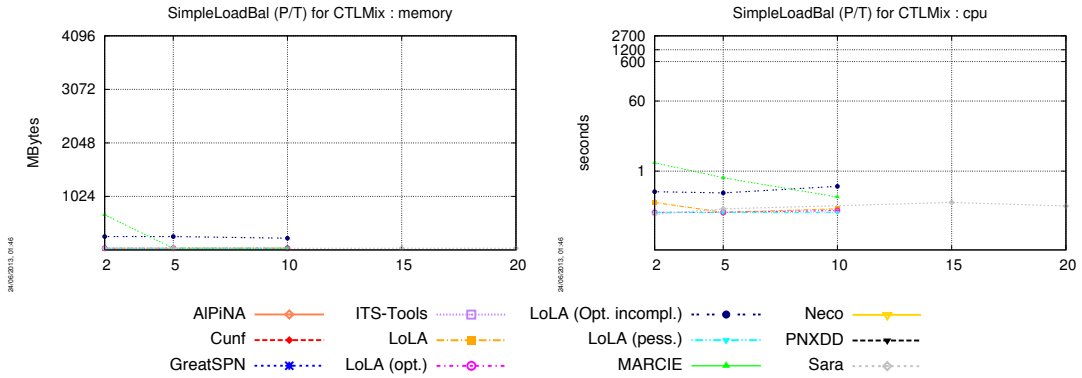
SharedMemory (colored) No instance of this model could be computed for the CTLMix examination.

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



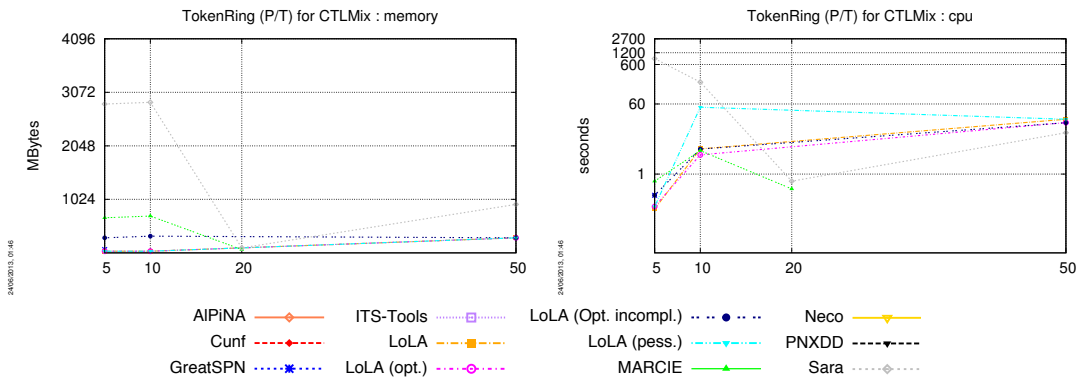
SimpleLoadBal (colored) No instance of this model could be computed for the CTLMix examination.

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

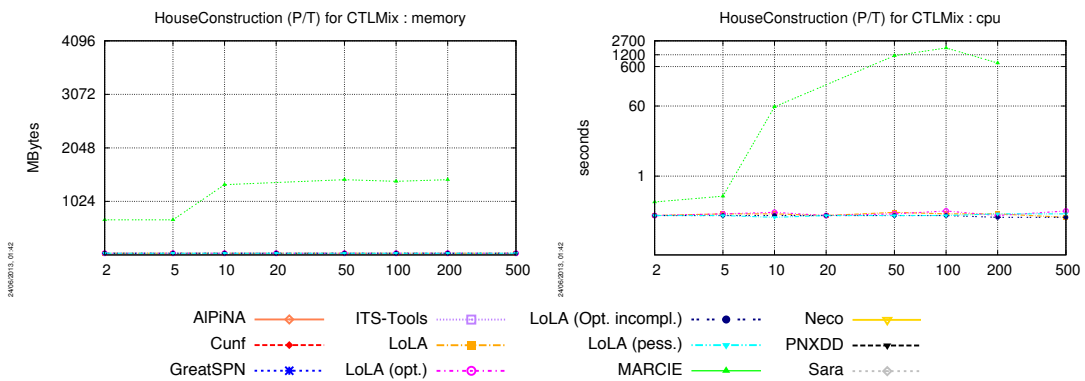


TokenRing (colored) No instance of this model could be computed for the **CTLMix** examination.

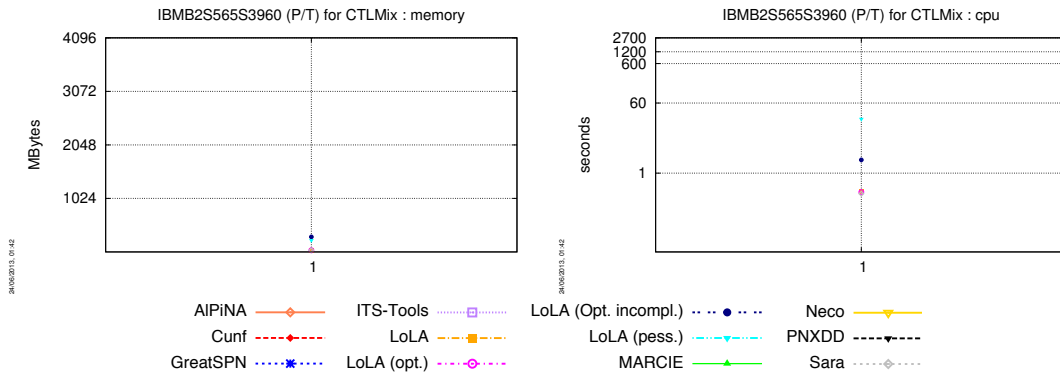
TokenRing (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

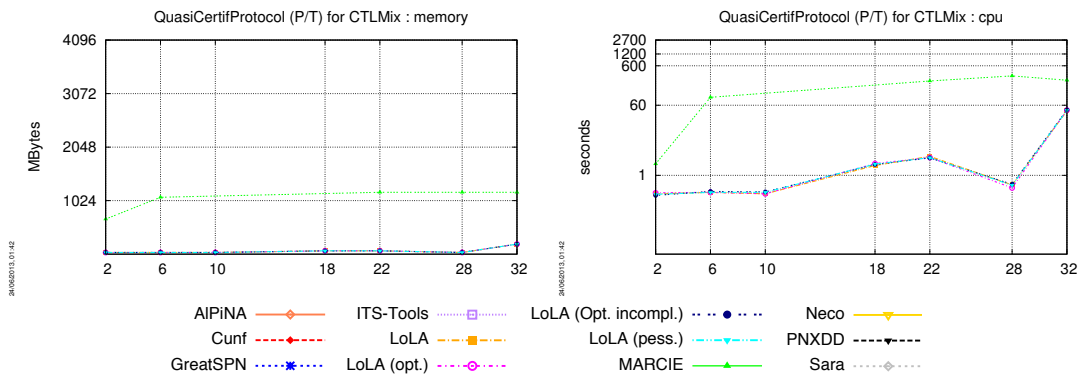


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

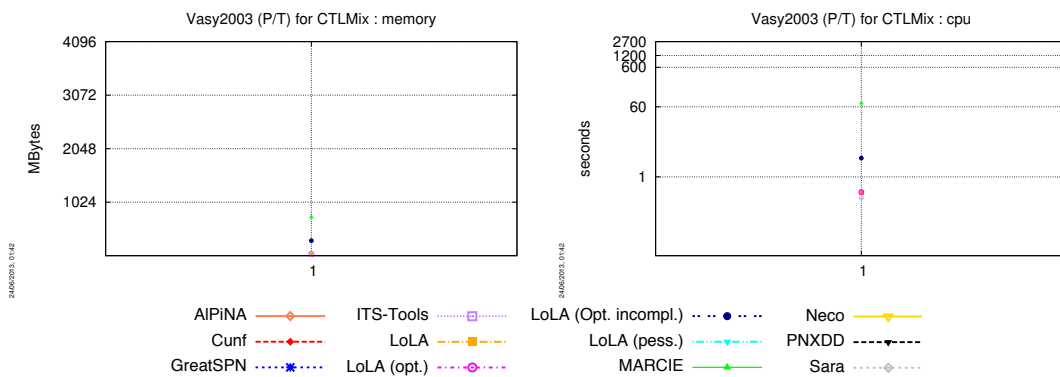


QuasiCertifProtocol (colored) No instance of this model could be computed for the **CTLMix** examination.

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 “Suprise” 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	nc	nc	
03	nc	nc	nc	nc	nc	nc	nc	nc	nc	
04	nc	nc	nc	nc	nc	nc	nc	nc	nc	
05	nc	nc	nc	nc	nc	nc	nc	nc	nc	
07	nc	nc	nc	nc	nc	nc	nc	nc	nc	
10	nc	nc	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	FFFFTTTT	cc			
03	FFFTTTTT	FF-T-FTF	FF-T-FTF	FF-T-T-	TF-T--	FFFFTTTT	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	FITT--T	FITT--T	-T-T--T	FITT--T	FFFFTTTT	cc			
015	nc	T--FFT	T--FFT	---FT	T--FFT	FFFFTTTT	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	nc	nc	
3	nc	nc	nc	nc	nc	nc	nc	nc	nc	
4	nc	nc	nc	nc	nc	nc	nc	nc	nc	
5	nc	nc	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	nc	nc	
10	nc	nc	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	FFFFTTTT	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--T-	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	FTFTFTF	---F-F	
020	nc	F-T--	F-T--	F-T--	F-T--	FFFFFFF	cc	
050	nc	-TT-TT-	-TT-TT-	-TT-TT-	-TT-TT-	FTFTFTF	cc	
100	nc	--F--	--F--	--F--	--F--	FTFTFTF	cc	
200	nc	-TF--F	-TF--F	-TF--F	-TF--F	FTFTFTF	----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	FTFTFTF	T---T-	T---T-	T---T-	T---T-	FTFTFTF	---F-	
005	FTFTFTF	-F-T--T	-F-T--T	-F-T--	-F-T--	FTFTFTF	cc	
010	FTFTFTF	FF--FF-	FF--FF-	---FF-	---FF-	FTFTFTF	cc	
020	FTFTFTF	-FT-TT-	-FT-TT-	-FT-TT-	-FT-TT-	FTFTFTF	cc	
050	FTFTFTF	TFFF-F-	TFFF-F-	TFFF-F-	TFFF-F-	FTFTFTF	---T-	
100	F	F-T-T-	F-T-T-	F-T-T-	F-T--	FTFTFTF	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	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	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
03	FTFTFTF	F-TF-FF-	F-TF-FF-	---FF-	to	FTFTFTF	---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	FTTTTIT	-TT-T-T	-TT-T-T	-TT-T-T	---T-	FTTTTIT	cc	
0010	FTFT?FTF	TT--TF	TT--TF	-T--TF	cc	cc	---F-	
0020	FTTTFFFT	---FT	---FT	---FT	---FT	FFFFFFFT	cc	
0050	FTTTFTF	-T-TT-	-T-TT-	-T-TT-	-T---	FTTTFTF	---TT-	
0100	to	---F-F	---F-F	---F-F	cc	FTTTFTF	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	nc
3	nc	nc	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
LamportFastMutEx (P/T)								
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt inc LoLa	pess	Marcie	Sara
2	nc	cc	cc	cc	cc	FTTTFTF	cc	
3	nc	cc	cc	cc	cc	FFFFFFF	cc	
4	nc	cc	cc	cc	cc	FFFFFFF	cc	
5	nc	cc	cc	cc	cc	cc	cc	
6	nc	cc	cc	cc	cc	to	cc	

7	nc	cc	cc	cc	cc	cc	to	cc			
8	nc	cc	cc	cc	cc	cc	cc	cc			
MAPK (P/T)											
Instances	GreatSPN	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Marcie	Sara
008	FFFTTTF	-FTF--	-FTF--		-FTF--		-FTF--	FFFTTFFF		cc	
020	TTFTTFFF	-T-T-F-	-T-T-F-		-T-T-F-		-T-T-F-	FFFFTFFF		cc	
040	to	---T-	---T-		---T-		---T-	FFFFFFF		cc	
080	to	-TFF--	-TFF--		-TFF--		to	FFFTTFFF		cc	
160	to	--F-F-	--F-F-		--F-F-		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	nc
3	nc	nc	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	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	cc
4	nc	cc	cc		cc		cc	to		cc	cc
5	nc	---T-	---T-		to		to	cc		cc	cc
6	nc	cc	cc		cc		cc	cc		cc	cc
7	nc	cc	cc		cc		cc	to		cc	cc
8	nc	to	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	nc
02	nc	nc	nc		nc		nc	nc		nc	nc
05	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
PermAdmissibility (P/T)											
Instances	GreatSPN	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Marcie	Sara
01	to	TTF-F-	TTF-F-		TTF-F-		TTF--	FTFTTFFF		cc	
02	FTFTTTTF	-F-F--F	-F-F--F		to		to	to		cc	
05	?????FFT	cc	cc		to		to	to		cc	
10	FTFTTFFT	FFTF-T-	FFTF-T-		FFTF-T-		FFTF-T-	to		---T-	
20	FFFT?FTF	--T--	--T--		to		to	cc		cc	
50	FTFTTFT	---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	nc
3	nc	nc	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
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	FFFTTFFF		cc	
4	nc	-T--TF	-T--TF		-T--TF		-T--TF	cc		cc	cc
5	nc	-T---	-T---		to		to	cc		cc	cc
6	nc	-F--T	-F--T		-F--T		-F--T	to		to	to
7	nc	---FF	---FF		to		----F	to		cc	cc

Philosophers (colored)								
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie 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	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie Sara
000005	FFFTTFTF	-F--T-	-F--T-		-F--T-		-F--T-	FFFTTFTF ---F-
000010	FTFFFFTT	--F-T-T	--F-T-T		--F-T-T		--F-T-T	FTFFFFTT 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	FFFTFFFF 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 LoLa	inc LoLa	pess	Marcie 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	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie Sara
03	FTFTTFFF	---F-	---F-		---F-		---F-	FTFTTFFF 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 LoLa	inc LoLa	pess	Marcie Sara
nf	nf	nf	nf		nf		nf	nf
Railroad (P/T)								
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie Sara
005	nc	-TF-F-	-TF-F-		---F-		-TF-F-	FTFTFFFF 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
ResAllocation (P/T)								
Instances	GreatSPN	LoLA	LoLa	opt LoLa	opt LoLa	inc LoLa	pess	Marcie Sara
R002C002	nc	F-T-TFT	F-T-TFT		--T-TFT		F-T-TFT	FTFTFFFF ---FT-
R003C002	nc	-FTT-F-	-FTT-F-		-FTT-F-		-FTT-F-	FTFTFFFF 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-	FTFTFFFF cc
R003C015	nc	-FF--T	-FF--T		-FF--T		-FF--	FTFTFFFF -FF--
R003C020	nc	--F--	--F--		to		-F--	FTFTFFFF cc
R003C050	nc	--F-F-	--F-F-		to		to	FTFTFFFF 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	FFFFFFF	cc				
R015C002	nc	FTTF-F-T	FTTF-F-T	FTTF-F-T	FTTF-F-T	FTTTTFT	cc				
R020C002	nc	T-F-F-F-	T-F-F-F-	T-F-F-F-	T-F-F-F-	FFFFFFF	cc				
R050C002	nc	cc	cc	cc	to	FFFFFFF	cc				
R100C002	nc	FFF---	FFF---	FFF---	to	to	FFF---				
Ring (P/T)											
Instances	GreatSPN	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Marcie	Sara
none	nc	-F--F-	-F--F-	-F--F-	to	FFFFFFF	cc				
RwMutex (P/T)											
Instances	GreatSPN	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Marcie	Sara
r0010w0010	nc	TFTT-T-F	TFTT-T-F	TFTT--	TFTT--	FFFFFFF	cc				
r0010w0020	nc	F--TTT	F--TTT	---TTT	cc	FFFFFFT	cc				
r0010w0050	nc	-T-F-T-	-T-F-T-	-T-F-T-	cc	FTTTTTF	cc				
r0010w0100	nc	---FTT	---FTT	---T-	cc	cc	cc				
r0010w0500	nc	F-TF-F-	F-TF-F-	cc	F-TF-F-	FFFFFFF	cc				
r0010w1000	nc	-FTT-T-	-FTT-T-	-F-T--	-FTT-T-	FFFFFFF	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	pass	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	GreatSPN	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	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	FFFFFFF	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	pass	Marcie	Sara
02	nc	nc	nc	nc	nc	nc	nc	nc	nc		
05	nc	nc	nc	nc	nc	nc	nc	nc	nc		
10	nc	nc	nc	nc	nc	nc	nc	nc	nc		
15	nc	nc	nc	nc	nc	nc	nc	nc	nc		
20	nc	nc	nc	nc	nc	nc	nc	nc	nc		
SimpleLoadBal (P/T)											
Instances	GreatSPN	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Marcie	Sara
02	nc	---FT-	---FT-	---T-	---T-	FFFFFFF	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	FFFTFFTF	TF--T-T	TF--T-T	-F---	-F---	FFFTFFTF	T--T-T
010	to	F-T-TT-	F-T-TT-	---T-	---T-	FFFTFFTF	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	FFFTFFTF	cc
005	cc	cc		cc	cc	FFFTFFTF	cc
010	cc	cc		cc	cc	FFFTFFTF	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
IBMB2S56S3960 (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	FFFFFFF	cc
06	cc	cc		cc	cc	FFFFFFF	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	FFFFFFF	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										
Total Score	GreatSPN	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Marcie Sara
	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	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
NeoElection (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	pess	Marcie Sara
1st instance	0	1	1	1	1	1	1	0
instances	0	3	3	1	1	2	1	0
max reached	0	0	0	0	0	0	0	0
best	0	2	2	0	0	0	0	0
subtotal	0	6	6	2	3	2	0	0
PermAdmissibility (Colored)								
	GreatSPN	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
PermAdmissibility (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	pess	Marcie Sara
1st instance	1	1	1	1	1	1	1	1
instances	5	5	5	2	2	2	1	1
max reached	2	2	2	0	0	0	0	0
best	2	2	2	0	0	0	0	0
subtotal	10	10	10	3	3	2	2	2
Peterson (Colored)								
	GreatSPN	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
Peterson (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt	inc LoLa	pess	Marcie Sara
1st instance	0	1	1	1	1	1	1	0
instances	0	6	6	4	4	4	2	0
max reached	0	2	2	0	2	0	0	0
best	0	2	2	0	2	0	0	0
subtotal	0	11	11	5	9	3	0	0
Philosophers (Colored)								
	GreatSPN	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	LoLA	LoLa	opt LoLa	opt	inc LoLa	pess	Marcie Sara
1st instance	1	1	1	1	1	1	1	1
instances	3	5	5	5	2	5	1	1
max reached	0	0	0	0	0	0	0	0
best	0	2	2	2	0	0	0	0
subtotal	4	8	8	8	3	6	2	2
PhilosophersDyn (Colored)								
	GreatSPN	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	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	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
SimpleLoadBal (P/T)								
	GreatSPN	LoLA	LoLa	opt LoLa	opt inc	LoLa	pess	Marcie Sara
1st instance	0	1	1	1	1	1	1	0
instances	0	3	3	3	3	3	1	0
max reached	0	0	0	0	0	0	0	0
best	0	2	2	2	2	2	0	0
subtotal	0	6	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	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	LoLA	LoLa	opt LoLa	opt inc	LoLa	pess	Marcie Sara
1st instance	1	1	1	1	1	1	1	1
instances	1	2	2	2	2	2	2	1
max reached	0	0	0	0	0	0	0	0
best	0	2	2	2	2	2	2	0
subtotal	2	5	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	0	1	0	0
instances	0	0	0	0	0	3	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	2	0	0
subtotal	0	0	0	0	0	6	0	0
IBMB2S565S3960 (P/T)								
	LoLA	LoLa	opt LoLa	opt inc	LoLa	pess	Marcie	Sara
1st instance	1	1	1	1	1	0	0	0
instances	1	1	1	1	1	0	0	0
max reached	2	2	2	2	2	0	0	0
best	2	2	2	2	2	0	0	0
subtotal	6	6	6	6	6	0	0	0
QuasiCertifProtocol (Colored)								
	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
QuasiCertifProtocol (P/T)								
	LoLA	LoLa	opt LoLa	opt inc	LoLa	pess	Marcie	Sara
1st instance	0	0	0	0	0	1	0	0
instances	0	0	0	0	0	2	0	0
max reached	0	0	0	0	0	0	0	0
best	0	0	0	0	0	2	0	0
subtotal	0	0	0	0	0	5	0	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 191 points	LoLa opt 191 points	LoLa opt inc 158 points

For “Surprise” Models

1	2	2	2
			
Marcie 17 points	LoLA 12 points	LoLa opt 12 points	LoLa opt inc 12 points

Global

1	1	3
		
LoLA 215 points	LoLa opt 215 points	LoLa opt inc 182 points

Part V

LTL-based Analysis

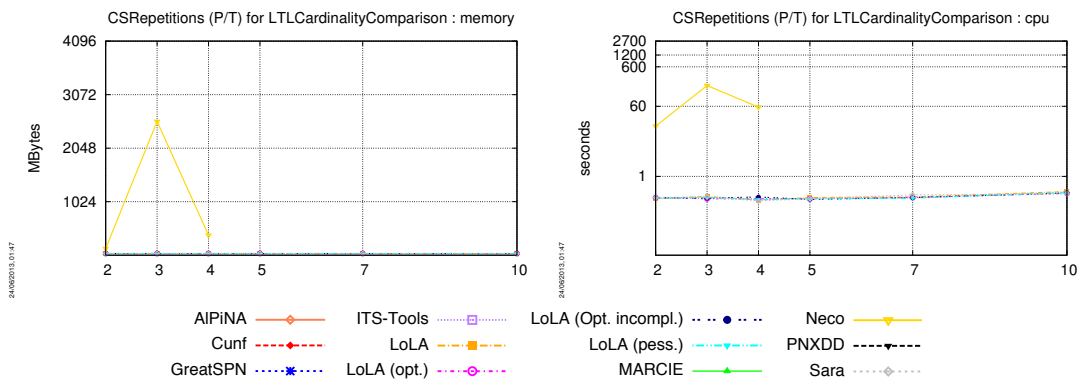
18 The LTLCardinalityComparison Examination

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.

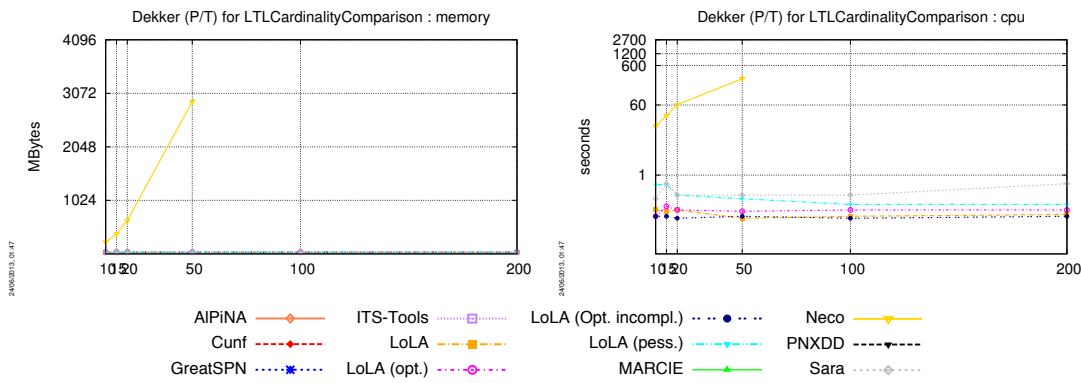
18.1 Handling of Models by Tools

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).



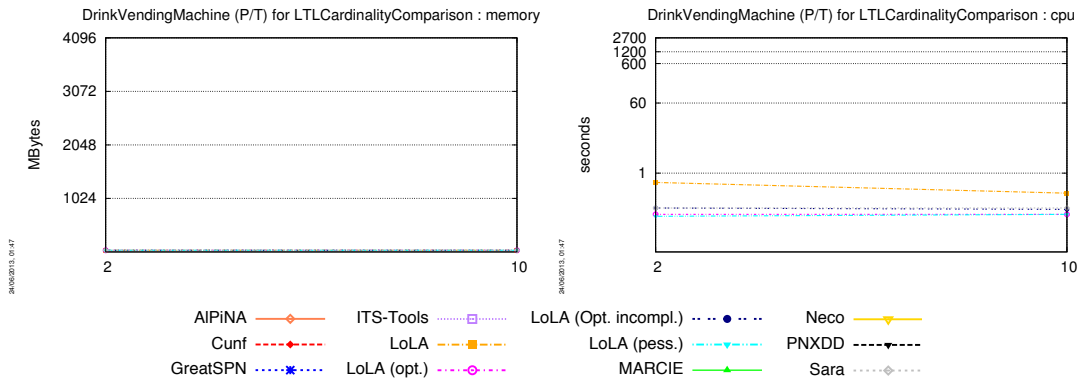
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



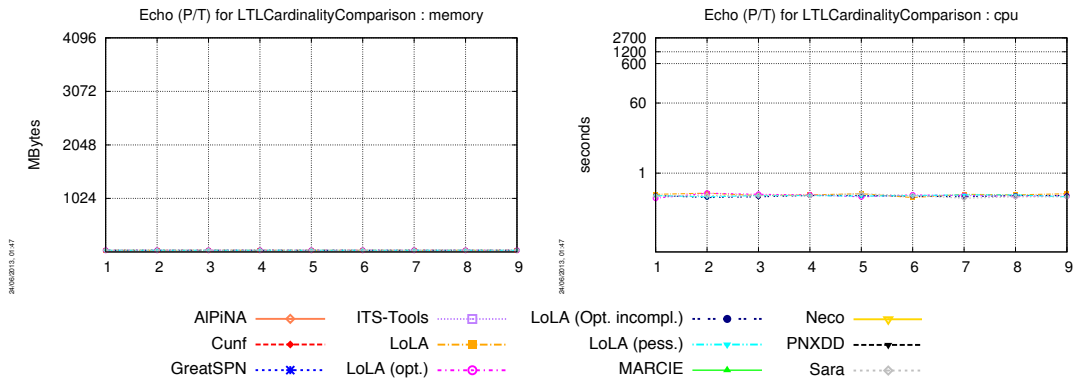
DotAndBoxes (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

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

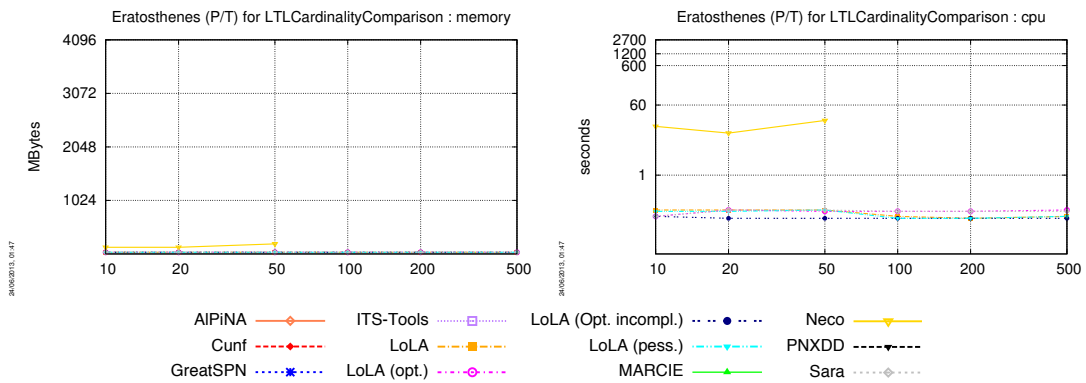
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



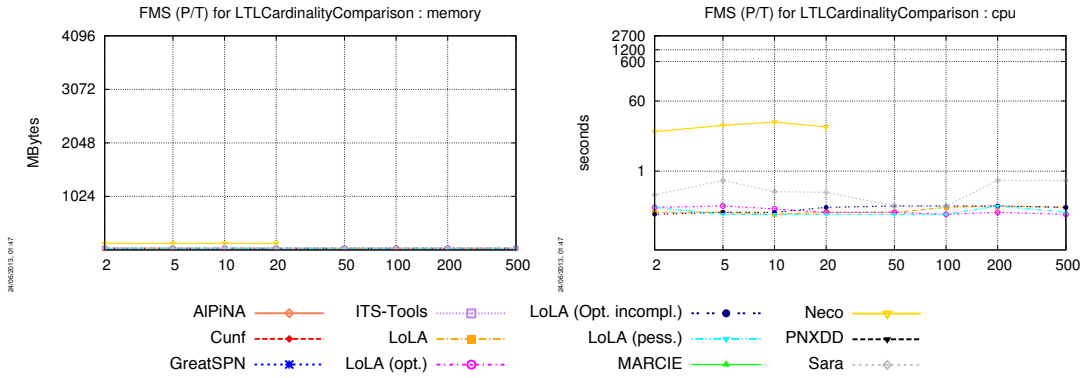
Echo (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

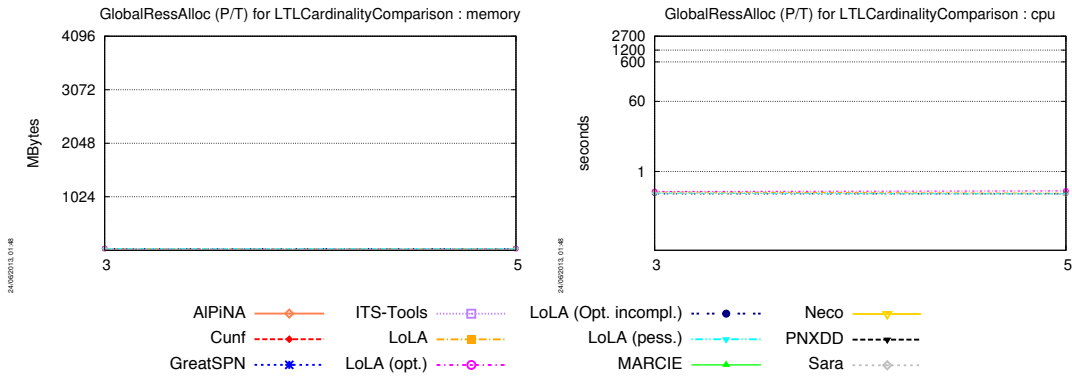


FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

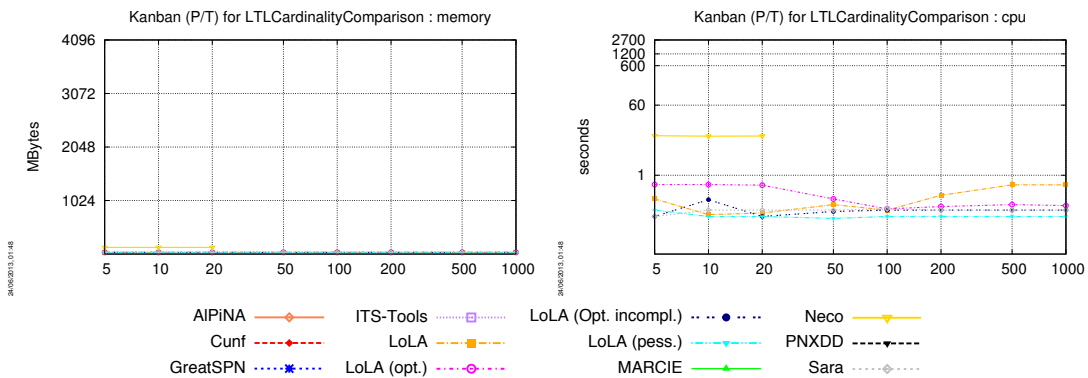


GlobalRessAlloc (colored) No instance of this model could be computed for the **LTLCardinality-Comparison** examination.

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

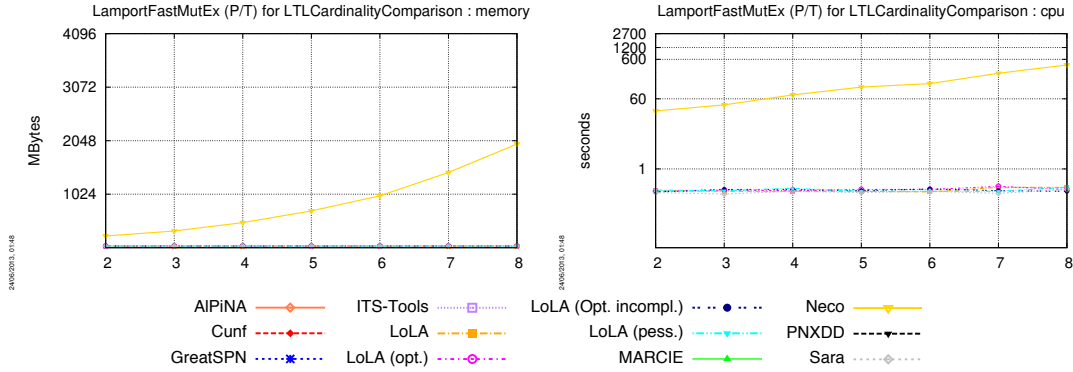


Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

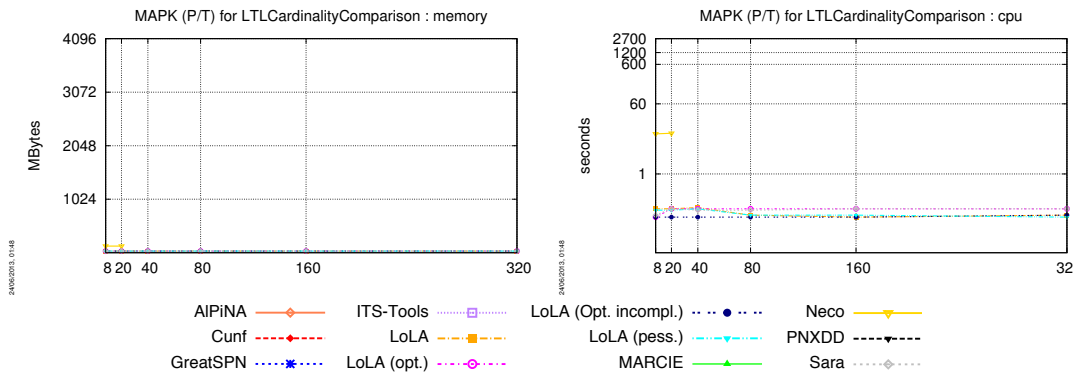


LamportFastMutEx (colored) No instance of this model could be computed for the **LTLCardinality-Comparison** examination.

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

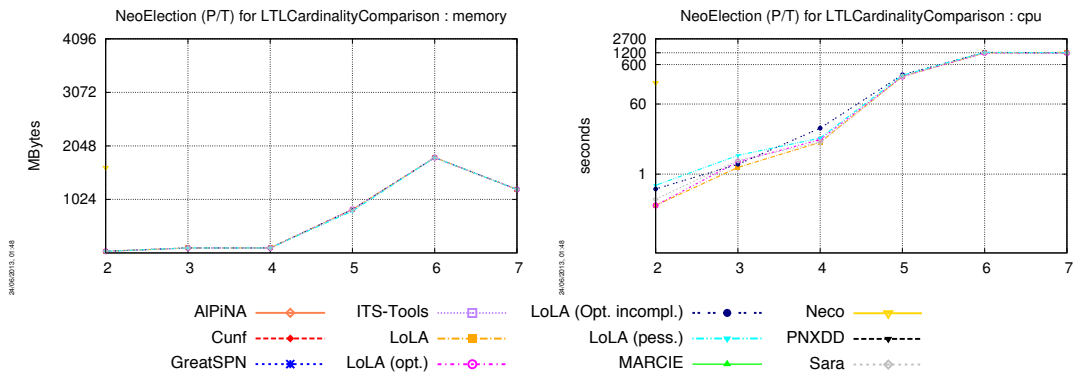


MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



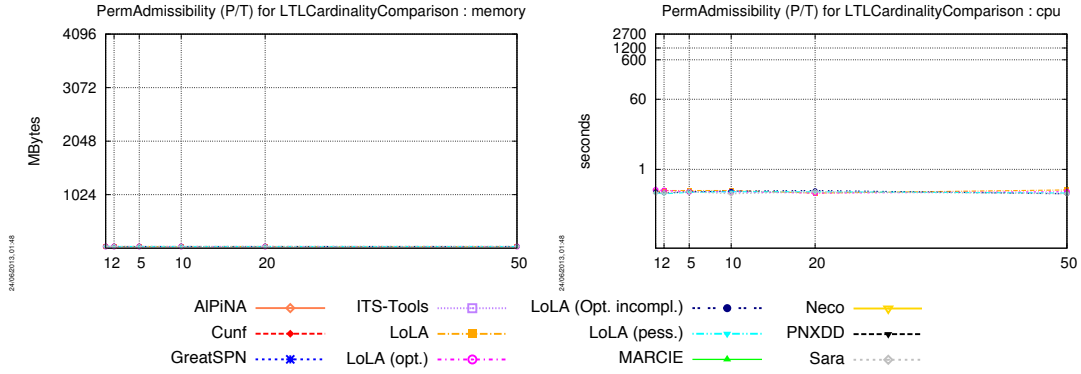
NeoElection (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

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



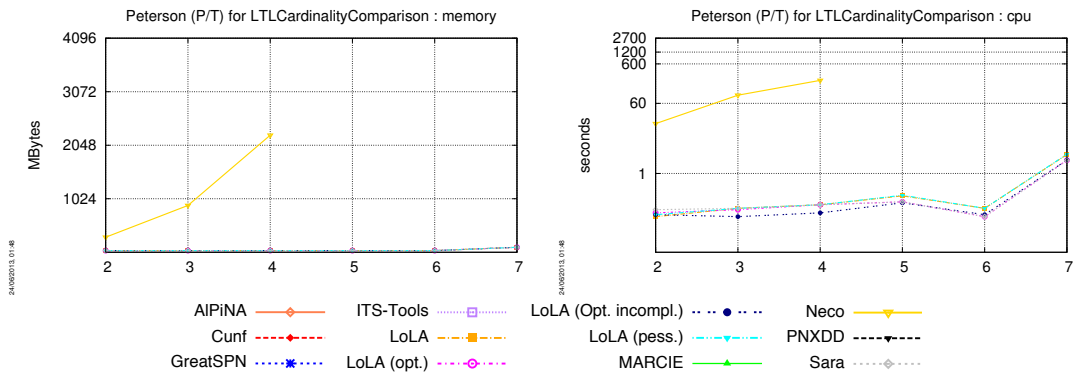
PermAdmissibility (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

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



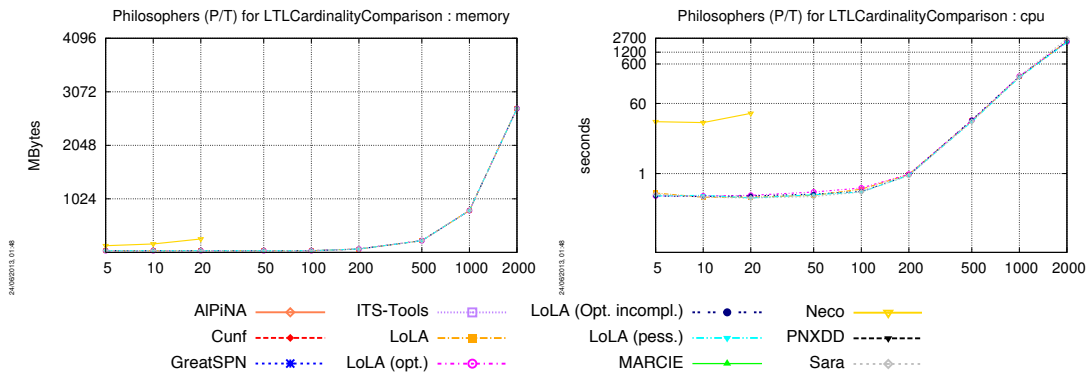
Peterson (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

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



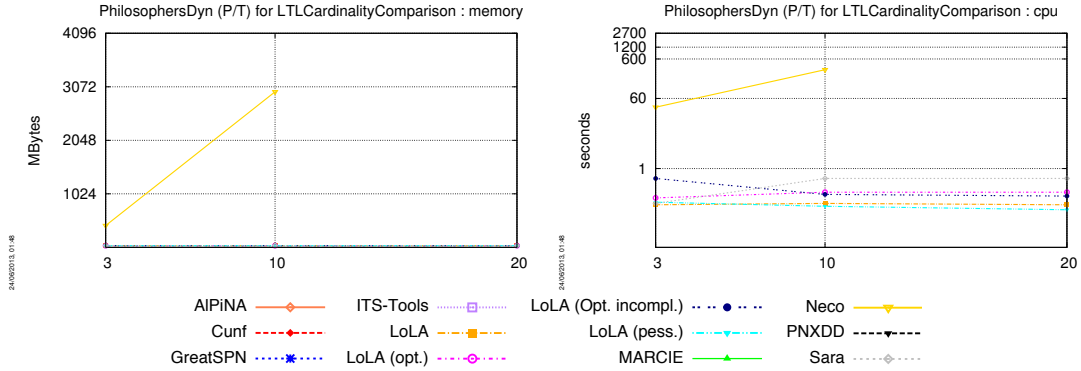
Philosophers (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

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



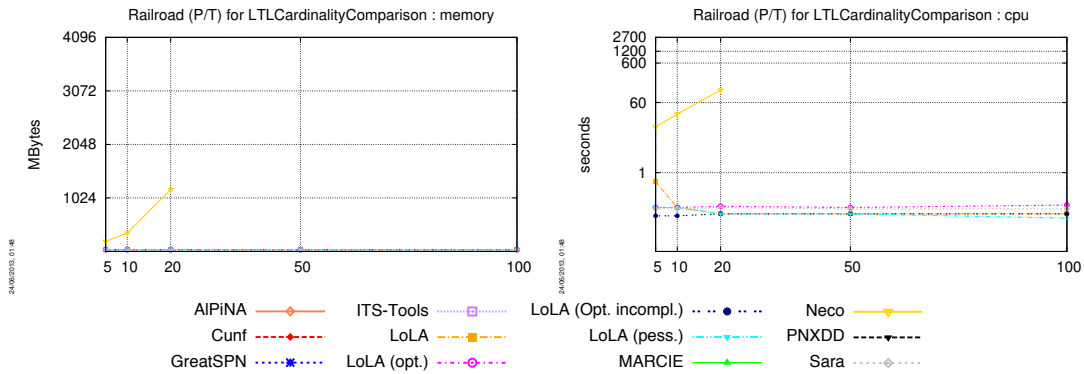
PhilosophersDyn (colored) No instance of this model could be computed for the **LTLCardinality-Comparison** examination.

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

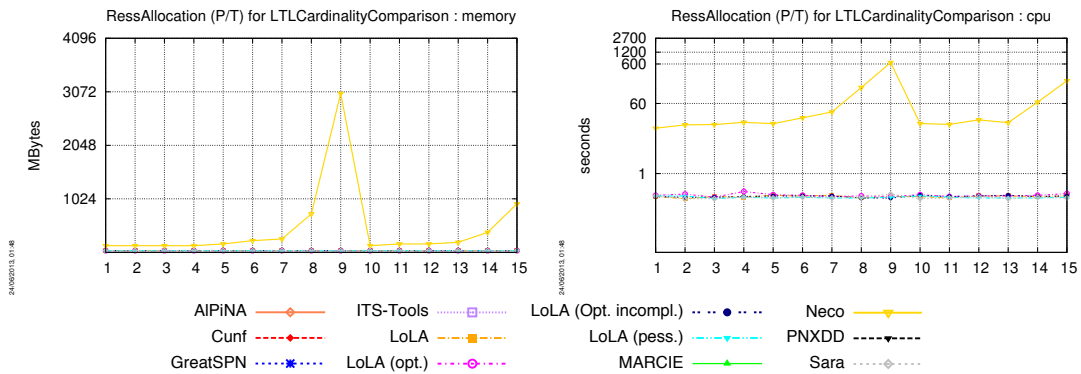


Planning (P/T) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

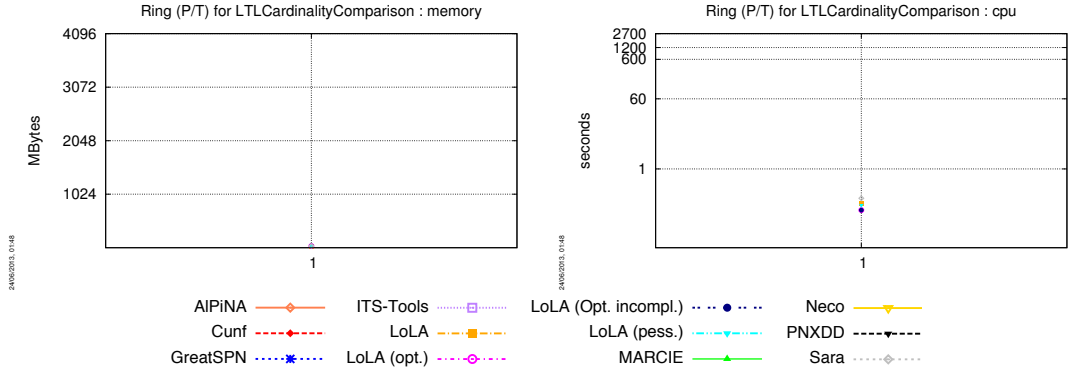
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



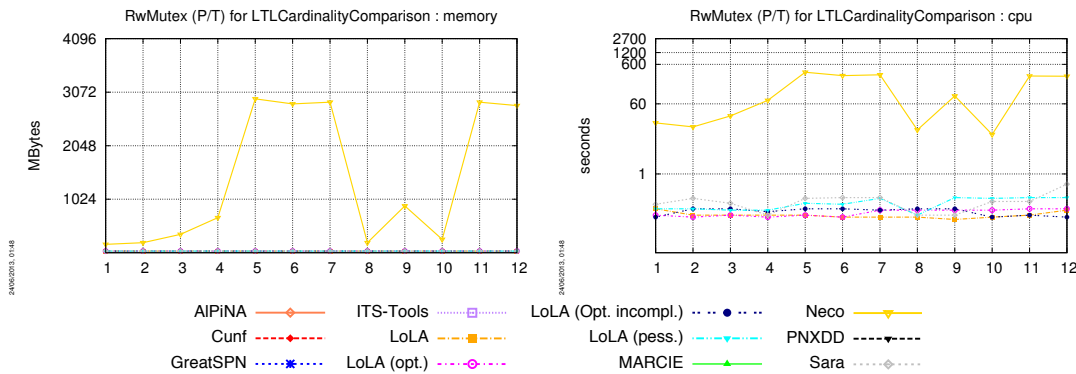
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

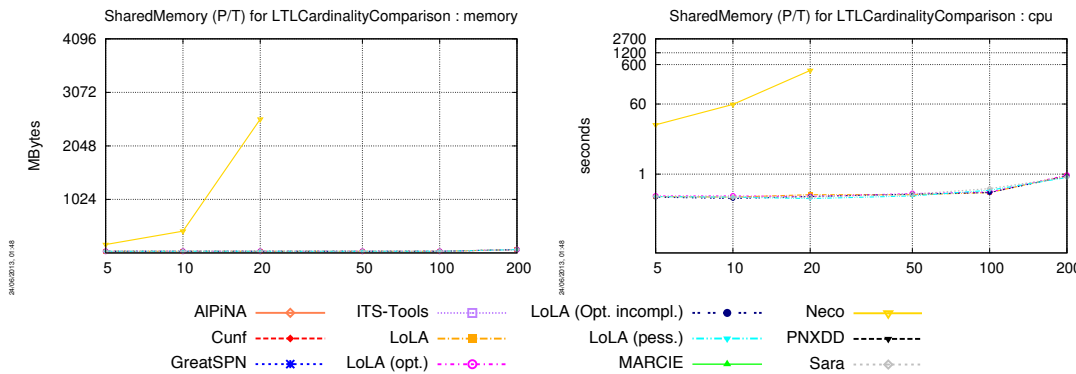


RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



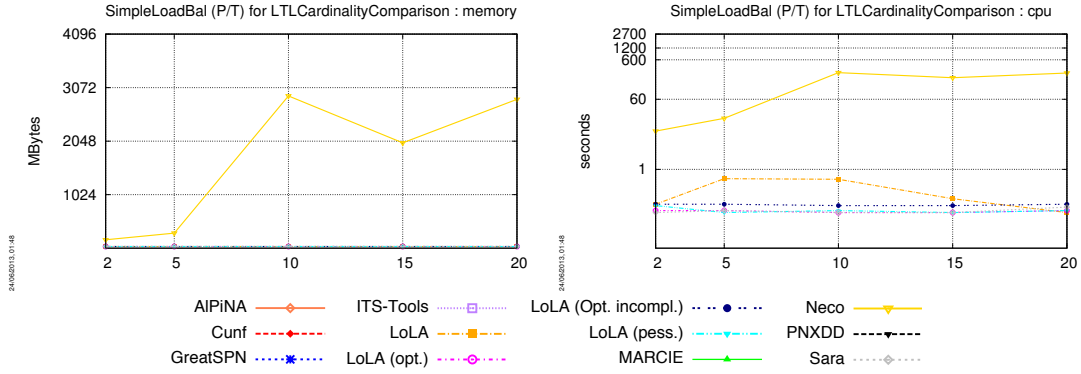
SharedMemory (colored) No instance of this model could be computed for the **LTLCardinality-Comparison** examination.

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.

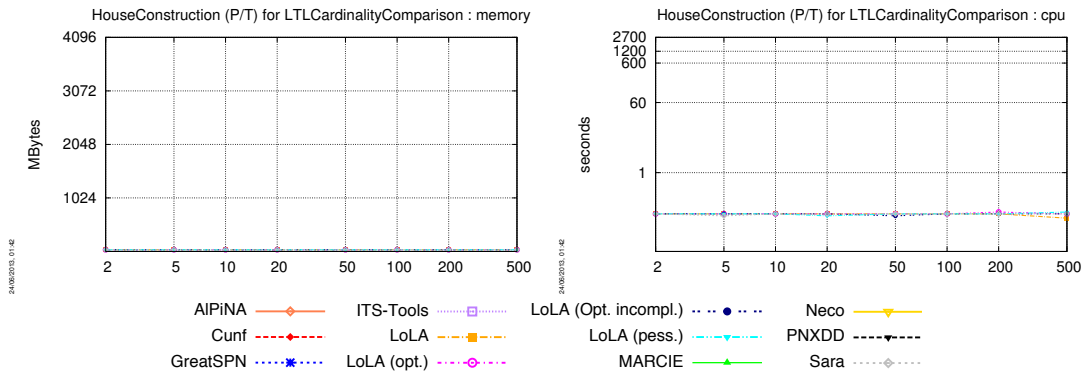
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



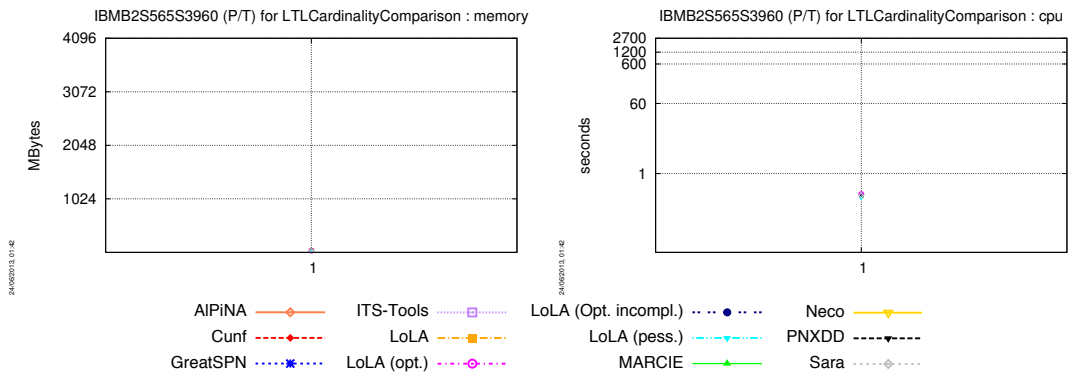
TokenRing (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

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).

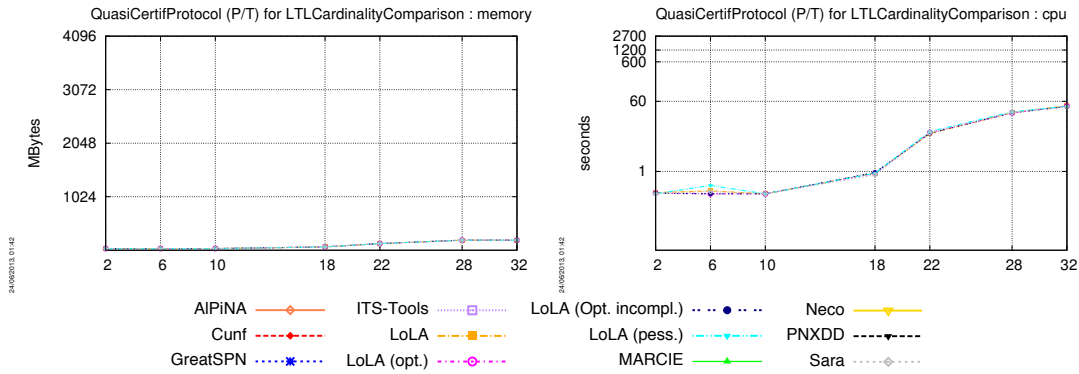


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

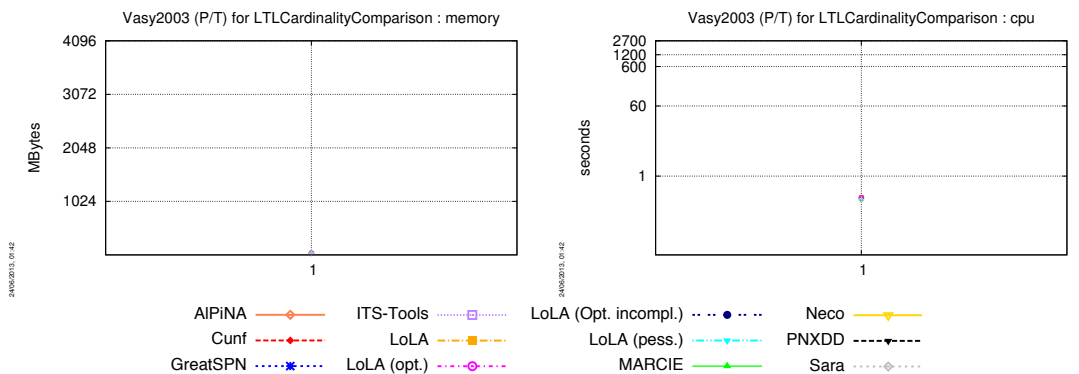


QuasiCertifProtocol (colored) No instance of this model could be computed for the **LTLCardinalityComparison** examination.

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



Vasy2003 (P/T) The charts below respectively show how tools compete with this “Surprise” 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	pass	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	pass	Neco	Sara
02	cc	cc			cc		cc		TTTTTF	cc
03	cc	cc			cc		cc		FTTTTF	cc
04	cc	cc			cc		cc		FFFFFF	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	pass	Neco	Sara
010	cc	cc			cc		cc		FFFFFF	cc
015	cc	cc			cc		cc		FTTTTF	cc
020	cc	cc			cc		cc		FTFTTT	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	pass	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	pass	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	pass	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	pass	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	pass	Neco	Sara
010	cc	cc			cc		cc		FTFTTF	cc
020	cc	cc			cc		cc		FTFTTF	cc
050	cc	cc			cc		cc		TTTTTF	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	pass	Neco	Sara
002	cc	cc			cc		cc		TTTTTF	cc

005	cc	cc		cc		cc	FFTTFFF	cc		
010	cc	cc		cc		cc	FTTTFFF	cc		
020	cc	cc		cc		cc	FFFFFFF	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		
GlobalResAlloc (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
GlobalResAlloc (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		TTTTFTT	cc
0010	cc	cc			cc		cc		TTTTFTF	cc
0020	cc	cc			cc		cc		FFTTFTF	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		FTTTFFF	cc
3	cc	cc			cc		cc		TTTTFFF	cc
4	cc	cc			cc		cc		FFFFFFT	cc
5	cc	cc			cc		cc		FTTTFTF	cc
6	cc	cc			cc		cc		TTTTFTF	cc
7	cc	cc			cc		cc		TTTTFTF	cc
8	cc	cc			cc		cc		TTTTTTF	cc
MAPK (P/T)										
Instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
008	cc	cc			cc		cc		FTTTFFF	cc
020	cc	cc			cc		cc		FTTTFTF	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	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	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	FTFTFFF	cc	
3	cc	cc		cc			cc	TTFTFFF	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	nc
Philosophers (P/T)							
Instances	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	Neco	Sara
000005	cc	cc		cc	cc	TTTTFFF	cc
000010	cc	cc		cc	cc	FTTTTTT	cc
000020	cc	cc		cc	cc	FTFTFFF	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	pass	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	pass	Neco	Sara
03	cc	cc		cc	cc	FTFTTF	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	pass	Neco	Sara
nf	nf	nf		nf	nf	nf	nf
Railroad (P/T)							
Instances	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	Neco	Sara
005	cc	cc		cc	cc	FTFTFFF	cc
010	cc	cc		cc	cc	FFFFTTF	cc
020	cc	cc		cc	cc	FTTTFFF	cc
050	cc	cc		cc	cc	cc	cc
100	cc	cc		cc	cc	cc	cc
ResAllocation (P/T)							
Instances	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	Neco	Sara
R002C002	cc	cc		cc	cc	TTTTTTT	cc
R003C002	cc	cc		cc	cc	FTFTTTF	cc
R003C003	cc	cc		cc	cc	FTTTFTT	cc
R003C005	cc	cc		cc	cc	FTTTFTT	cc
R003C010	cc	cc		cc	cc	TTTTTTT	cc
R003C015	cc	cc		cc	cc	FTFTTTF	cc
R003C020	cc	cc		cc	cc	TTTTFFF	cc
R003C050	cc	cc		cc	cc	FTTTFTF	cc
R003C100	cc	cc		cc	cc	TTTT?FTF	cc
R005C002	cc	cc		cc	cc	FTTTFTF	cc
R010C002	cc	cc		cc	cc	FFFFFFF	cc
R015C002	cc	cc		cc	cc	FTFTTTF	cc
R020C002	cc	cc		cc	cc	FFFFTTF	cc
R050C002	cc	cc		cc	cc	FTTTFTT	cc
R100C002	cc	cc		cc	cc	FFTTFTF	cc
Ring (P/T)							
Instances	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	Neco	Sara
none	cc	cc		cc	cc	nc	cc
RwMutex (P/T)							
Instances	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	Neco	Sara
r0010w0010	cc	cc		cc	cc	FTTTTTT	cc
r0010w0020	cc	cc		cc	cc	FTTTFTF	cc

r0010w0050	cc	cc	cc	cc	FFFFFFF	cc				
r0010w0100	cc	cc	cc	cc	FFFFFFTTT	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	FFFFFFFFF	cc				
r0100w0010	cc	cc	cc	cc	FTFTFTF	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		FFFFFFFTF	cc
000010	cc	cc		cc			cc		TTFTFFFF	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		FTTFFFFF	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
002	cc	cc			cc		cc
005	cc	cc			cc		cc
010	cc	cc			cc		cc
020	cc	cc			cc		cc
050	cc	cc			cc		cc
100	cc	cc			cc		cc
200	cc	cc			cc		cc
500	cc	cc			cc		cc
IBMB2S565S3960 (P/T)							
instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa
none	cc	cc			cc		cc
QuasiCertifProtocol (colored)							
instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa
02	nc	nc			nc		nc
06	nc	nc			nc		nc
10	nc	nc			nc		nc
18	nc	nc			nc		nc
22	nc	nc			nc		nc
28	nc	nc			nc		nc
32	nc	nc			nc		nc
QuasiCertifProtocol (P/T)							
instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa
02	cc	cc			cc		cc
06	cc	cc			cc		cc
10	cc	cc			cc		cc
18	cc	cc			cc		cc
22	cc	cc			cc		cc
28	cc	cc			cc		cc
32	cc	cc			cc		cc
Vasy2003 (P/T)							
instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa
none	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

Total Score	0	0	0	0	114	0
CSRepetitions (Colored)						
	LoLA	LoLa	opt	LoLa	opt	inc
	LoLa	opt	LoLa	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	opt	LoLa	inc	LoLa	pess
	Neco	Sara				
1st instance	0	0	0	0	0	1
instances	0	0	0	0	0	3
max reached	0	0	0	0	0	0
best	0	0	0	0	0	2
subtotal	0	0	0	0	0	6
Dekker (P/T)						
	LoLA	LoLa	opt	LoLa	opt	inc
	LoLa	opt	LoLa	inc	LoLa	pess
	Neco	Sara				
1st instance	0	0	0	0	0	1
instances	0	0	0	0	0	3
max reached	0	0	0	0	0	0
best	0	0	0	0	0	2
subtotal	0	0	0	0	0	6
DotAndBoxes (Colored)						
	LoLA	LoLa	opt	LoLa	opt	inc
	LoLa	opt	LoLa	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	opt	LoLa	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	opt	LoLa	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	opt	LoLa	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	opt	LoLa	inc	LoLa	pess
	Neco	Sara				
1st instance	0	0	0	0	0	1
instances	0	0	0	0	0	3
max reached	0	0	0	0	0	0
best	0	0	0	0	0	2
subtotal	0	0	0	0	0	6
FMS (P/T)						
	LoLA	LoLa	opt	LoLa	opt	inc
	LoLa	opt	LoLa	inc	LoLa	pess
	Neco	Sara				
1st instance	0	0	0	0	0	1

instances	0	0	0	0	4	0		
max reached	0	0	0	0	0	0		
best	0	0	0	0	0	2		
subtotal	0	0	0	0	0	7	0	
GlobalResAlloc (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
GlobalResAlloc (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	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	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	0
instances	0	0		0			0	3	0	0
max reached	0	0		0			0	0	0	0
best	0	0		0			0	2	0	0
subtotal	0	0		0			0	6	0	0
RessAllocation (P/T)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
1st instance	0	0		0			0	1	0	0
instances	0	0		0			0	15	0	0
max reached	0	0		0			0	2	0	0
best	0	0		0			0	2	0	0
subtotal	0	0		0			0	20	0	0
Ring (P/T)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
1st instance	0	0		0			0	1	0	0
instances	0	0		0			0	6	0	0
max reached	0	0		0			0	0	0	0
best	0	0		0			0	2	0	0
subtotal	0	0		0			0	9	0	0
SharedMemory (Colored)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
1st instance	0	0		0			0	1	0	0
instances	0	0		0			0	2	0	0
max reached	0	0		0			0	0	0	0
best	0	0		0			0	2	0	0
subtotal	0	0		0			0	5	0	0
SimpleLoadBal (Colored)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
1st instance	0	0		0			0	1	0	0
instances	0	0		0			0	4	0	0
max reached	0	0		0			0	0	0	0
best	0	0		0			0	2	0	0
subtotal	0	0		0			0	7	0	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

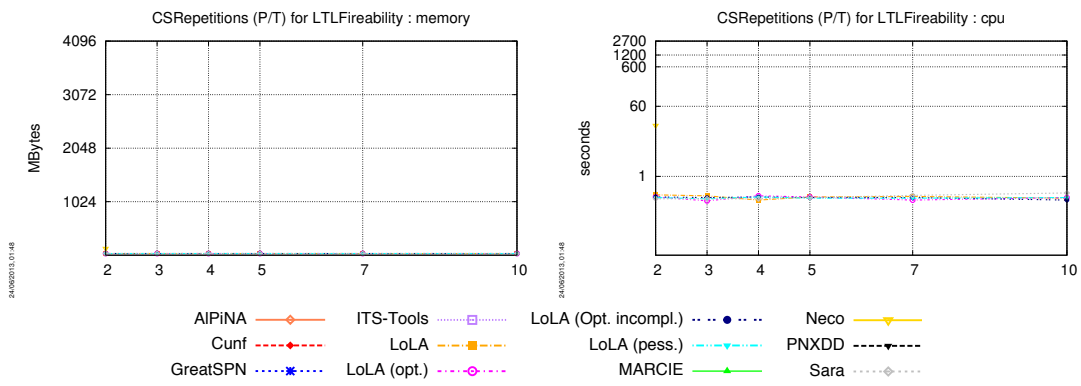
19 The LTLFireability Examination

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.

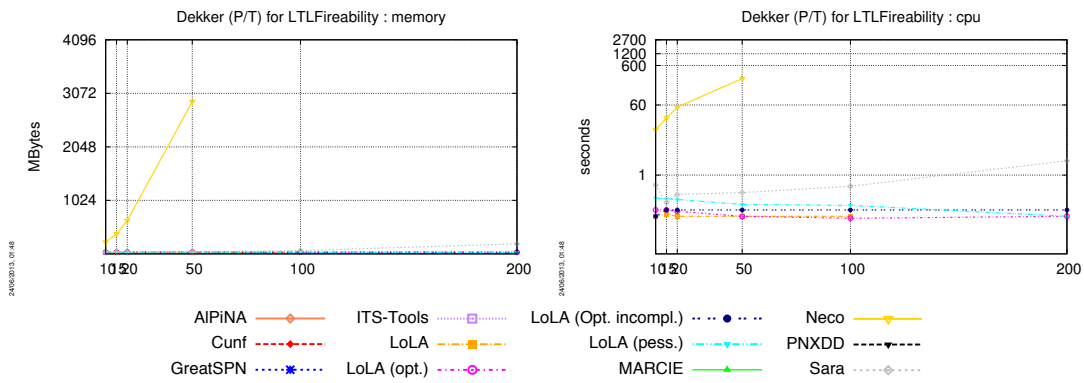
19.1 Handling of Models by Tools

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).



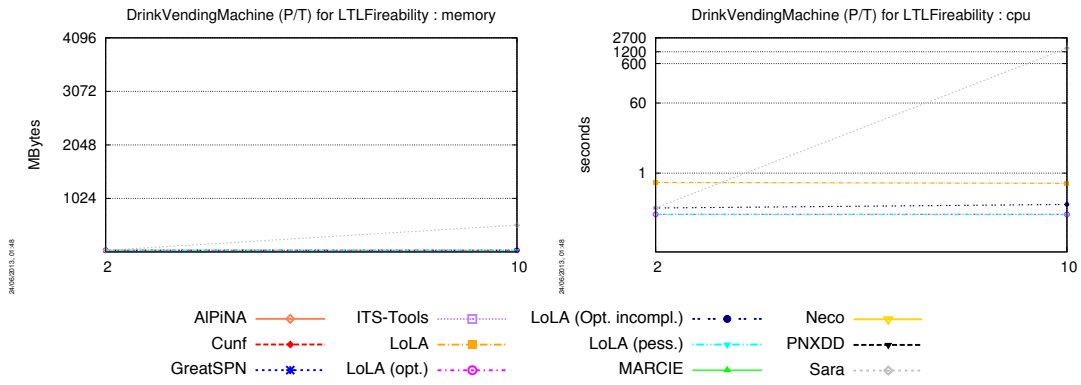
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



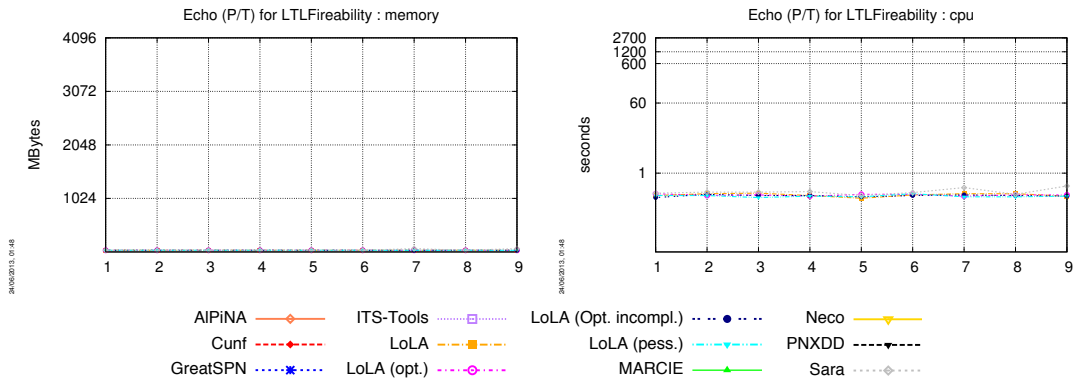
DotAndBoxes (colored) No instance of this model could be computed for the **LTLFireability** examination.

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

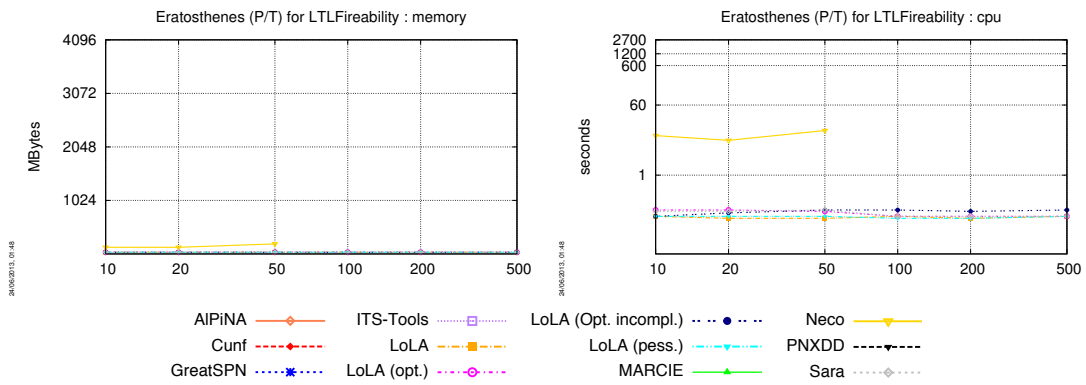
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



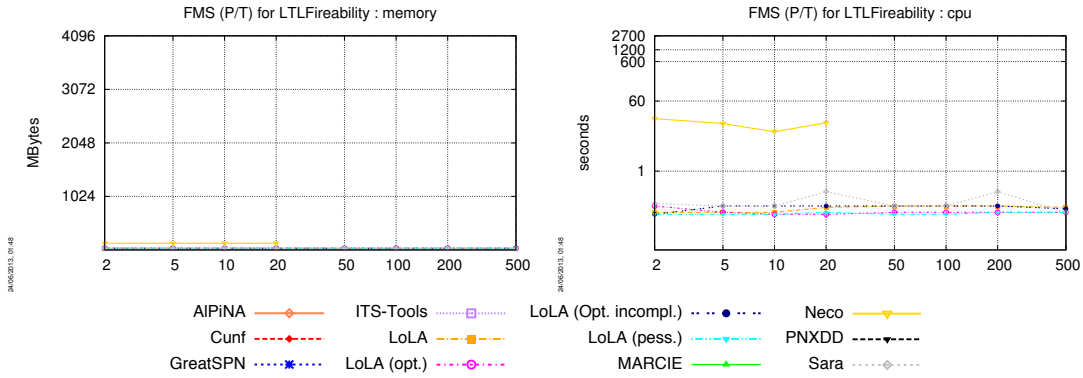
Echo (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

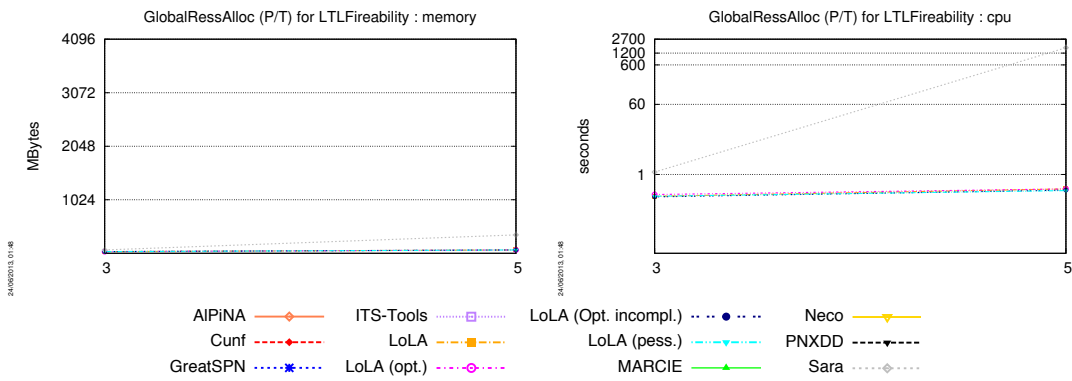


FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

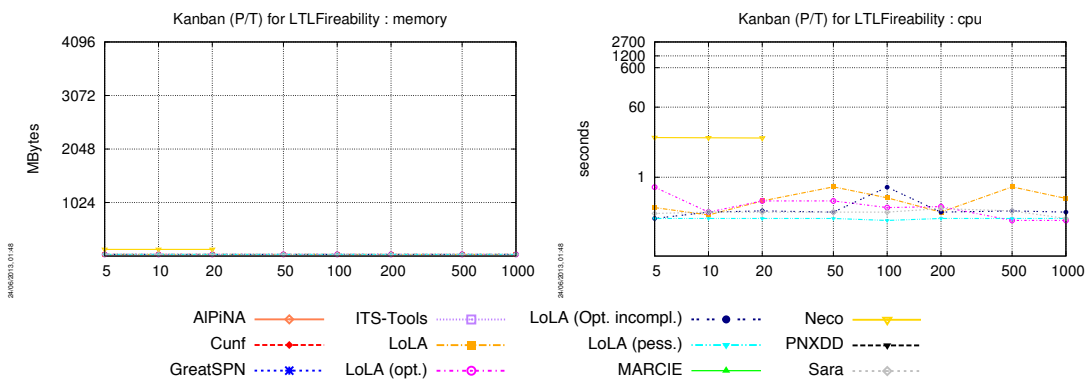


GlobalRessAlloc (colored) No instance of this model could be computed for the **LTLFireability** examination.

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

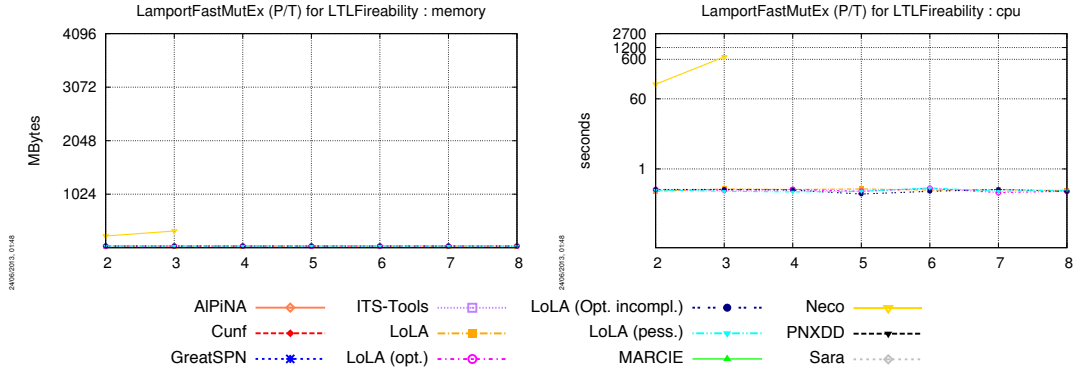


Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

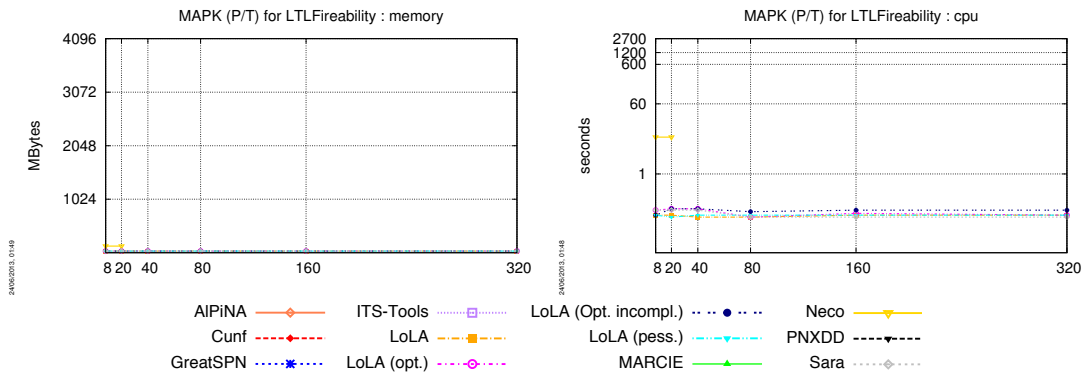


LamportFastMutEx (colored) No instance of this model could be computed for the **LTLFireability** examination.

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

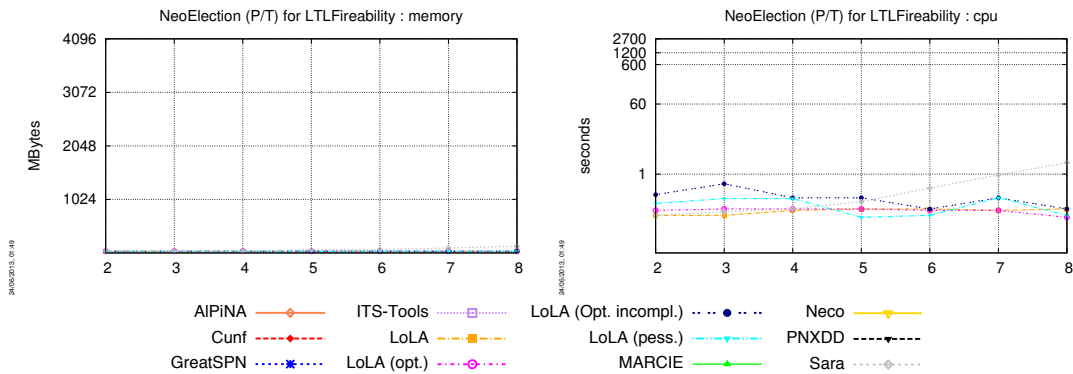


MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



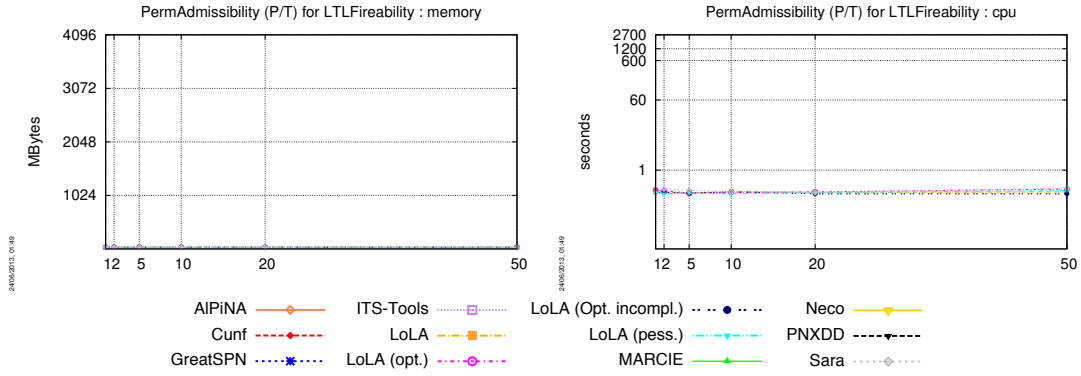
NeoElection (colored) No instance of this model could be computed for the **LTLFireability** examination.

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



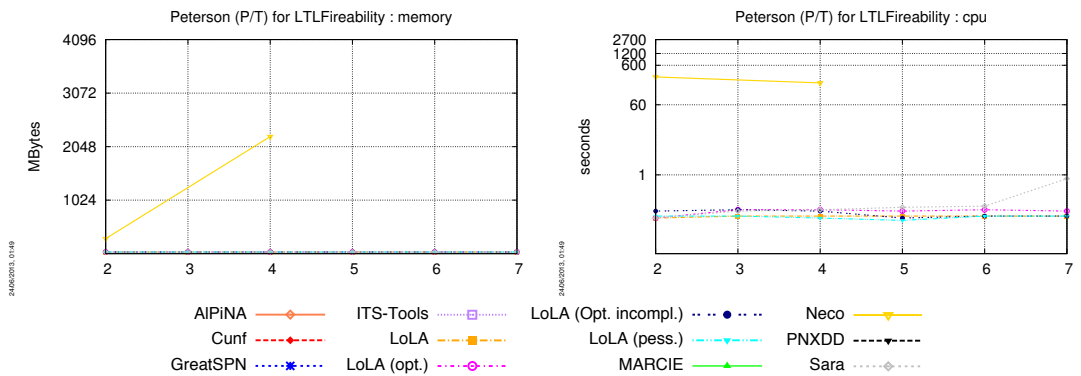
PermAdmissibility (colored) No instance of this model could be computed for the **LTLFireability** examination.

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



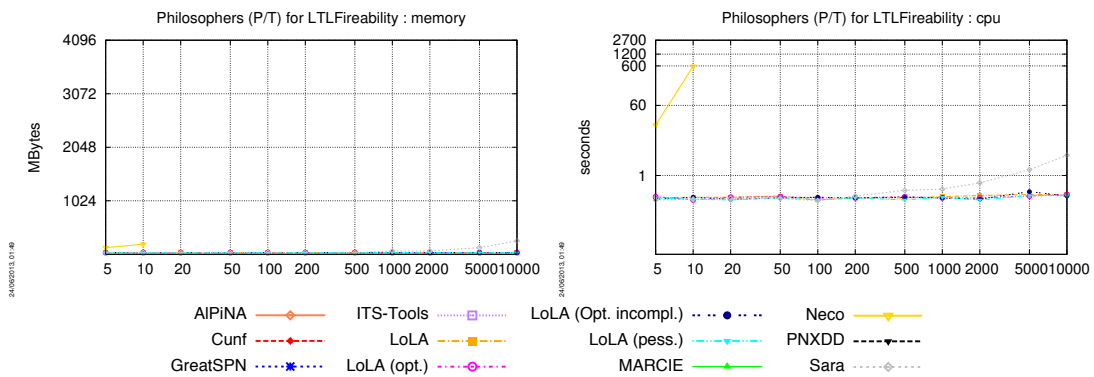
Peterson (colored) No instance of this model could be computed for the **LTLFireability** examination.

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



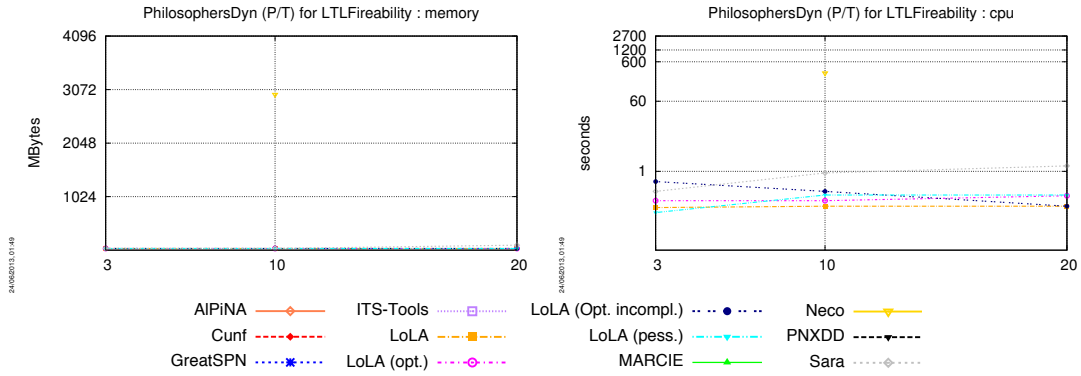
Philosophers (colored) No instance of this model could be computed for the **LTLFireability** examination.

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



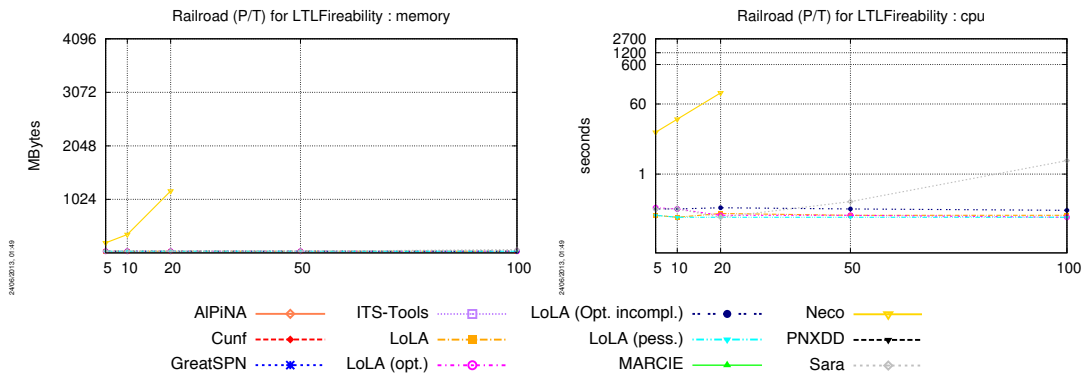
PhilosophersDyn (colored) No instance of this model could be computed for the **LTLFireability** examination.

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

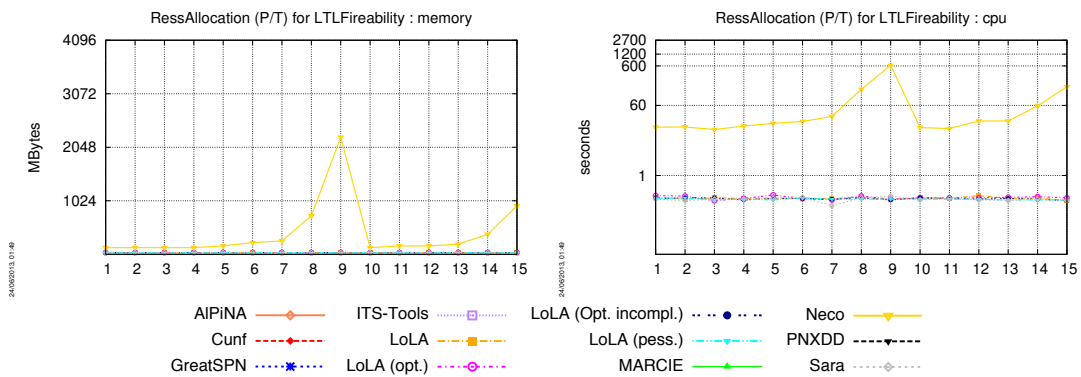


Planning (P/T) No instance of this model could be computed for the **LTLFireability** examination.

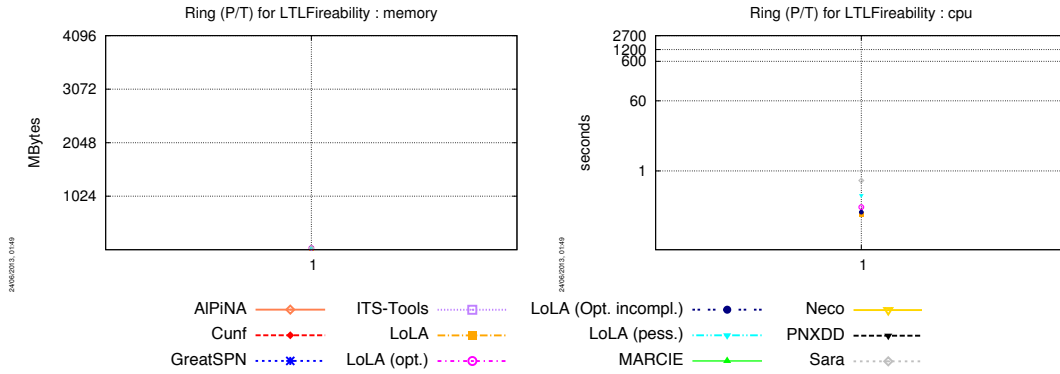
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



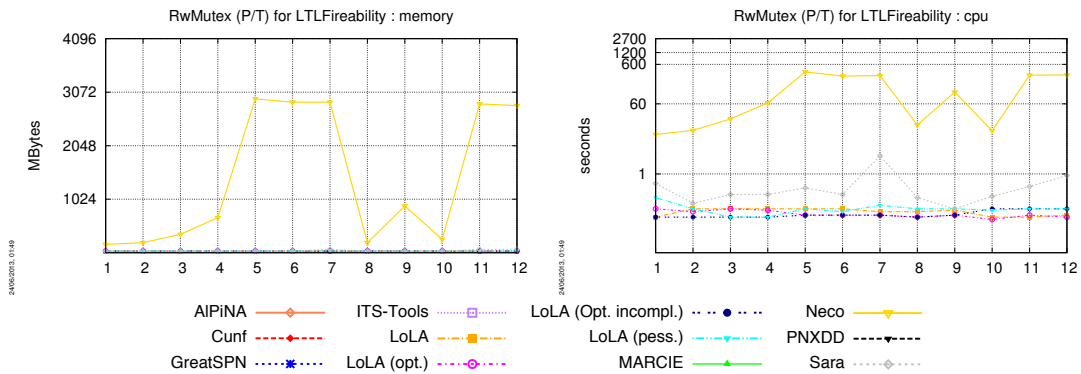
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

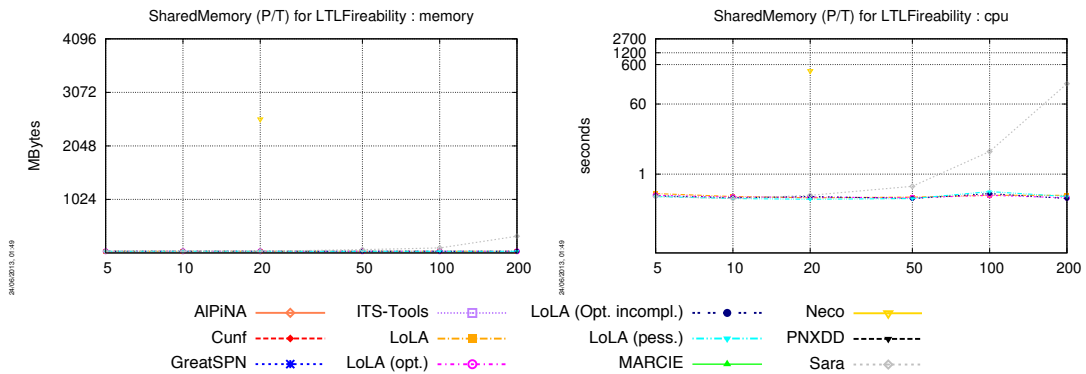


RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



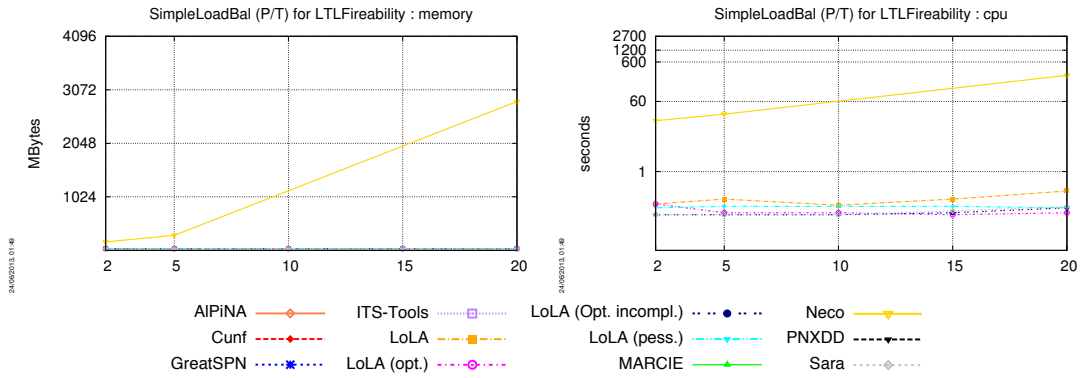
SharedMemory (colored) No instance of this model could be computed for the **LTLFireability** examination.

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



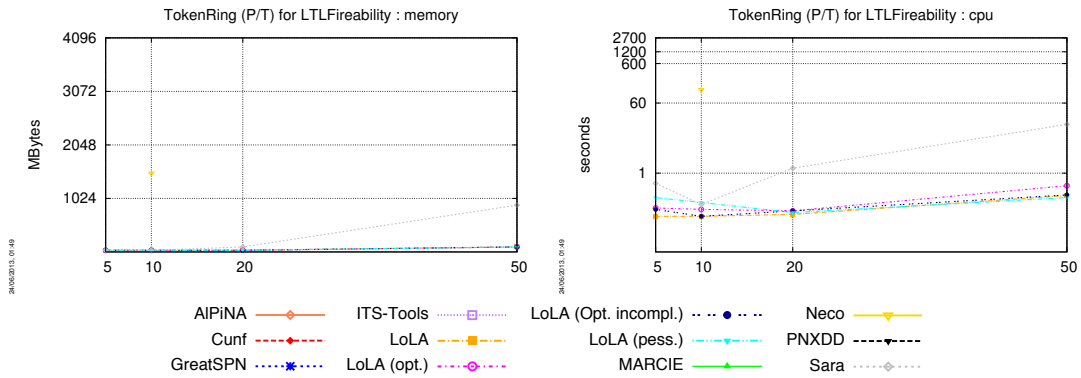
SimpleLoadBal (colored) No instance of this model could be computed for the **LTLFireability** examination.

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

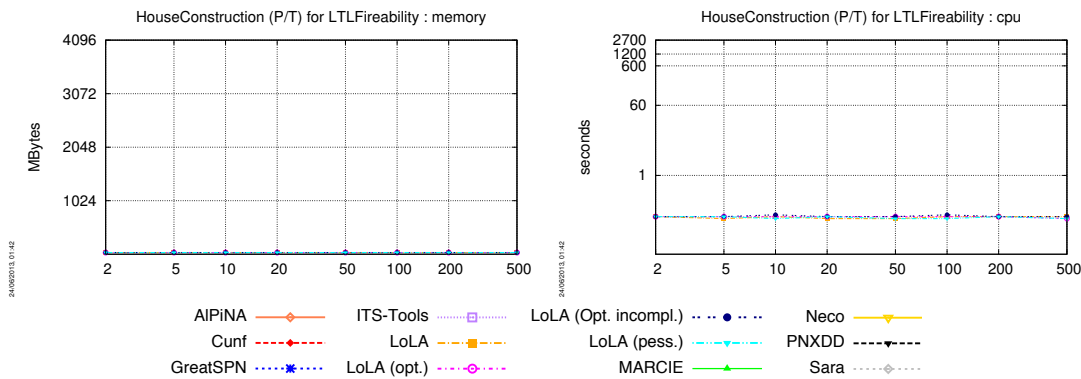


TokenRing (colored) No instance of this model could be computed for the **LTLFireability** examination.

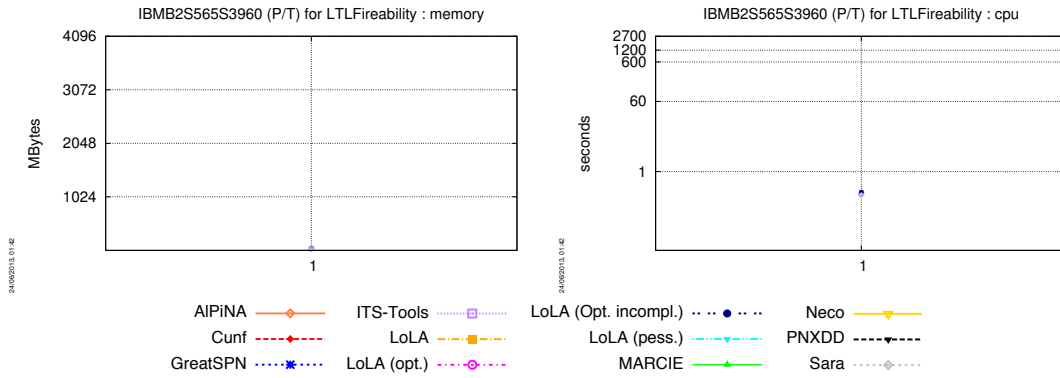
TokenRing (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

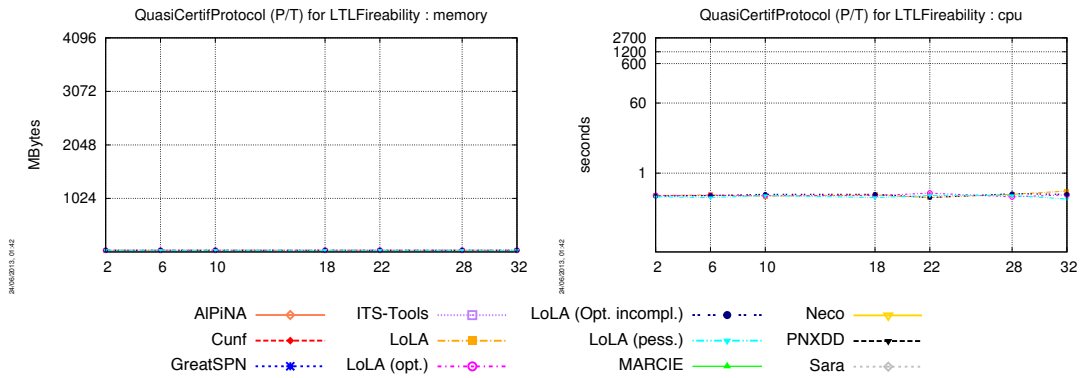


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

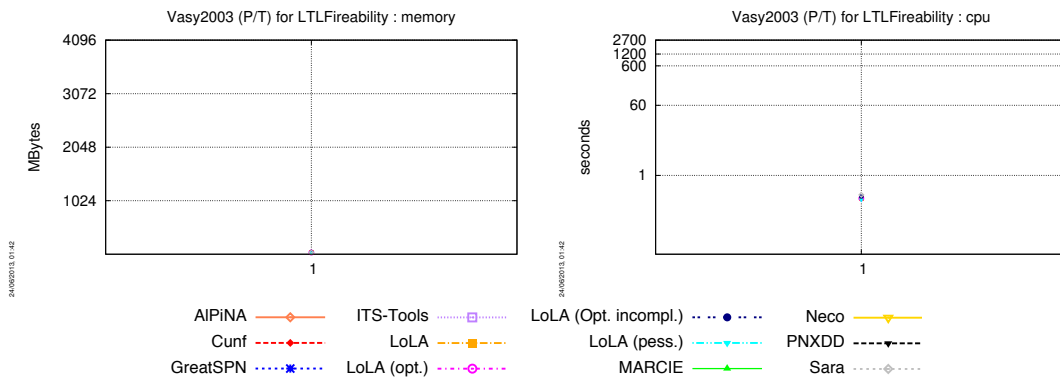


QuasiCertifProtocol (colored) No instance of this model could be computed for the **LTLFireability** examination.

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	FFFFFF	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	FTFTFFF	cc
015	cc	cc			cc			cc	FFFTFFF	cc
020	cc	cc			cc			cc	FFFFFFF	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	TTTTTTT	cc	
020	cc	cc		cc			cc	TTTTFTT	cc	
050	cc	cc		cc			cc	TTTTFTF	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	FTTTTTF	cc	
005	cc	cc		cc			cc	FTTTTTF	cc	
010	cc	cc		cc			cc	FTTTTTF	cc	
020	cc	cc		cc			cc	FTTTFTT	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	
GlobalResAlloc (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	
GlobalResAlloc (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	FTTTTTF	cc	
0010	cc	cc		cc			cc	FTTTTTF	cc	
0020	cc	cc		cc			cc	FTTTTTF	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	FFFFFFF	cc	
3	cc	cc			cc		cc	FFFFFFF	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	FFFFFFF	cc	
020	cc	cc			cc		cc	FFFFFFF	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	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	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	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	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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara

2	cc	cc	cc	cc	FFFFTFFF	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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
000005	cc	cc		cc		cc	FFFFFTT	cc	cc	cc
000010	cc	cc		cc		cc	FTFFFFF	cc	cc	cc
000020	cc	cc		cc		cc	to	cc	cc	cc
000050	cc	cc		cc		cc	cc	cc	cc	cc
000100	cc	cc		cc		cc	cc	cc	cc	cc
000200	cc	cc		cc		cc	cc	cc	cc	cc
000500	cc	cc		cc		cc	cc	cc	cc	cc
001000	cc	cc		cc		cc	cc	cc	cc	cc
002000	cc	cc		cc		cc	cc	cc	cc	cc
005000	cc	cc		cc		cc	cc	cc	cc	cc
010000	cc	cc		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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
03	cc	cc		cc		cc	to	cc	cc	cc
10	cc	cc		cc		cc	cc	cc	cc	cc
20	cc	cc		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	nf	nf	nf
Railroad (P/T)										
Instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
005	cc	cc		cc		cc	FFFFFTT	cc	cc	cc
010	cc	cc		cc		cc	FFFFFFF	cc	cc	cc
020	cc	cc		cc		cc	FTTTTTF	cc	cc	cc
050	cc	cc		cc		cc	cc	cc	cc	cc
100	cc	cc		cc		cc	cc	cc	cc	cc
ResAllocation (P/T)										
Instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
R002C002	cc	cc		cc		cc	FTTTTTF	cc	cc	cc
R003C002	cc	cc		cc		cc	FFFFTTT	cc	cc	cc

R003C003	cc	cc		cc		cc	FTFTFFF	cc		
R003C005	cc	cc		cc		cc	FFFFFFF	cc		
R003C010	cc	cc		cc		cc	FTTFTTF	cc		
R003C015	cc	cc		cc		cc	FFFFFFF	cc		
R003C020	cc	cc		cc		cc	FFFFFFF	cc		
R003C050	cc	cc		cc		cc	FTFTFFF	cc		
R003C100	cc	cc		cc		cc	FFFFFFF	cc		
R005C002	cc	cc		cc		cc	FTTFTTF	cc		
R010C002	cc	cc		cc		cc	FTFTFFF	cc		
R015C002	cc	cc		cc		cc	FFFFFFF	cc		
R020C002	cc	cc		cc		cc	FFFFFFF	cc		
R050C002	cc	cc		cc		cc	FFFFFFF	cc		
R100C002	cc	cc		cc		cc	FFFFFFF	cc		
Ring (P/T)										
Instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Neco	Sara
none	cc	cc		cc			cc		nc	cc
RwMutex (P/T)										
Instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Neco	Sara
r0010w0010	cc	cc		cc			cc	FFFFFFF	cc	cc
r0010w0020	cc	cc		cc			cc	FTTFTTF	cc	cc
r0010w0050	cc	cc		cc			cc	FTFTFFF	cc	cc
r0010w0100	cc	cc		cc			cc	FTFTTTT	cc	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	FFFFFFF	cc	cc
r0100w0010	cc	cc		cc			cc	FTTTTTF	cc	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	pass	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	pass	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	pass	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	nc
SimpleLoadBal (P/T)							
Instances	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	Neco	Sara
02	cc	cc		cc	cc	FTTTFFF	cc
05	cc	cc		cc	cc	FFFTFFF	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	pass	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	pass	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	pass	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	pass	Neco	Sara
none	cc	cc		cc	cc	cc	cc
QuasiCertifProtocol (colored)							
instances	LoLA	LoLa	opt LoLa	opt inc LoLa	pass	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	pass	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	pass	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	0	0	0	
Echo (P/T)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Neco	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)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Neco	Sara
1st instance	0	0		0			0	1	0	0
instances	0	0		0			0	3	0	0
max reached	0	0		0			0	0	0	0
best	0	0		0			0	2	0	0
subtotal	0	0		0			0	6	0	0
FMS (P/T)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Neco	Sara
1st instance	0	0		0			0	1	0	0
instances	0	0		0			0	4	0	0
max reached	0	0		0			0	0	0	0
best	0	0		0			0	2	0	0
subtotal	0	0		0			0	7	0	0
GlobalRessAlloc (Colored)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Neco	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)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Neco	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
Kanban (P/T)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Neco	Sara
1st instance	0	0		0			0	1	0	0
instances	0	0		0			0	3	0	0
max reached	0	0		0			0	0	0	0
best	0	0		0			0	2	0	0
subtotal	0	0		0			0	6	0	0
LamportFastMutEx (Colored)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Neco	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)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Neco	Sara
1st instance	0	0		0			0	1	0	0
instances	0	0		0			0	2	0	0
max reached	0	0		0			0	0	0	0
best	0	0		0			0	2	0	0
subtotal	0	0		0			0	5	0	0
MAPK (P/T)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	Neco	Sara
1st instance	0	0		0			0	1	0	0

instances	0	0	0	0	2	0		
max reached	0	0	0	0	0	0		
best	0	0	0	0	0	2		
subtotal	0	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	0	0	0	
best	0	0	0	0	0	0	0	0	0	
subtotal	0	0	0	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	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)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	peSS	Neco	Sara
1st instance	0	0		0			0	1	0	0
instances	0	0		0			0	2	0	0
max reached	0	0		0			0	0	0	0
best	0	0		0			0	2	0	0
subtotal	0	0		0			0	5	0	0
TokenRing (Colored)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	peSS	Neco	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)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	peSS	Neco	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	Neco	Sara
Total Score	0	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	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
IBMB2S565S3960 (P/T)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	peSS	Neco	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 (Colored)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	peSS	Neco	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)										

	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	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	pass	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

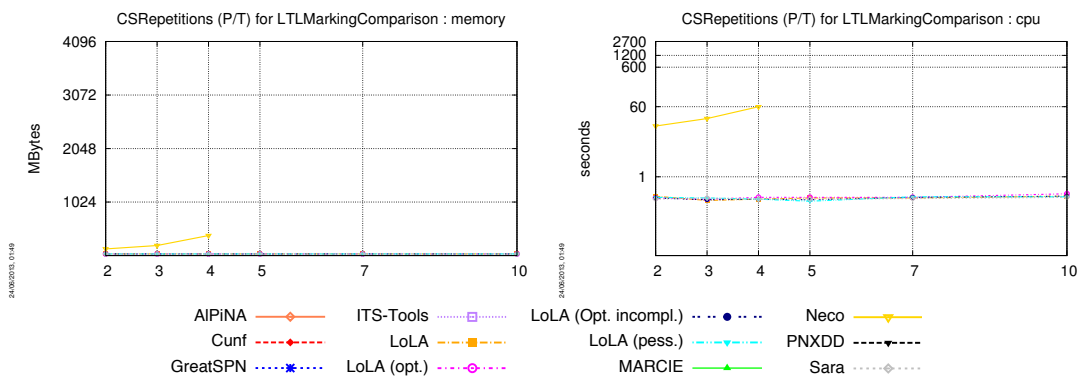
20 The LTLMarkingComparison Examination

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).

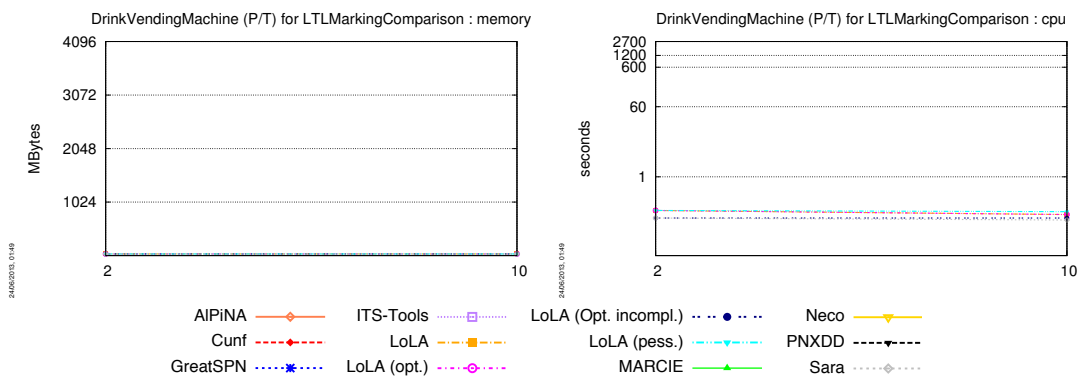


Dekker (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

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).



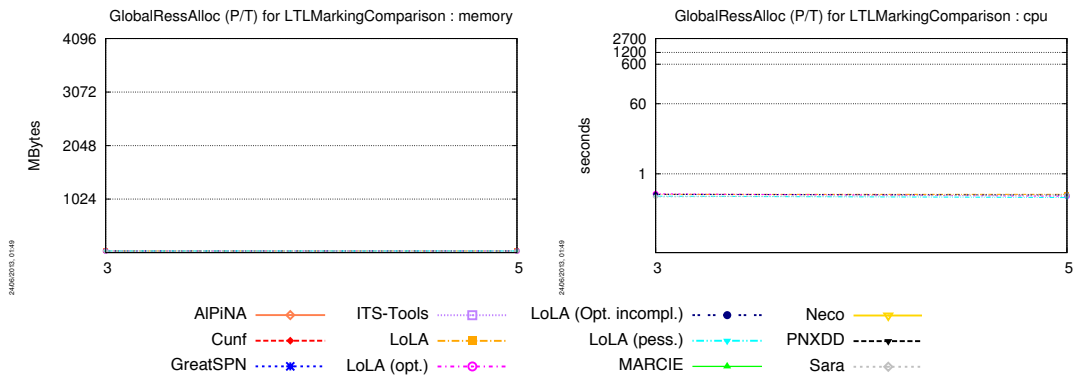
Echo (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

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.

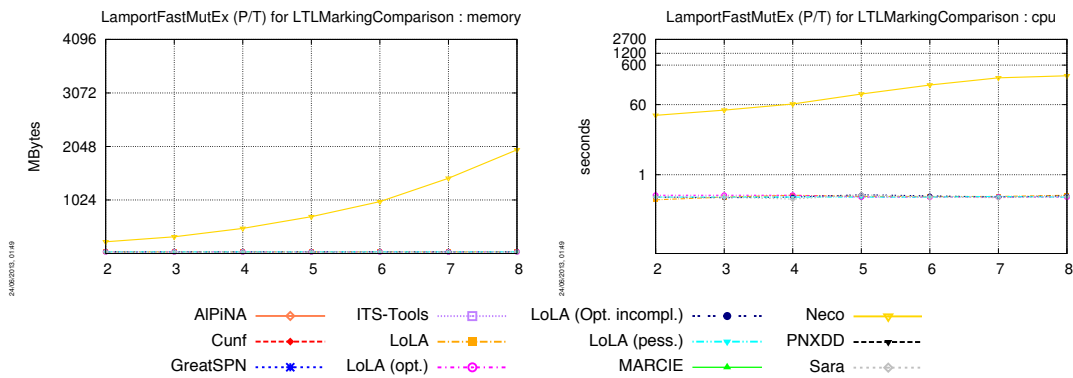
GlobalRessAlloc (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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.

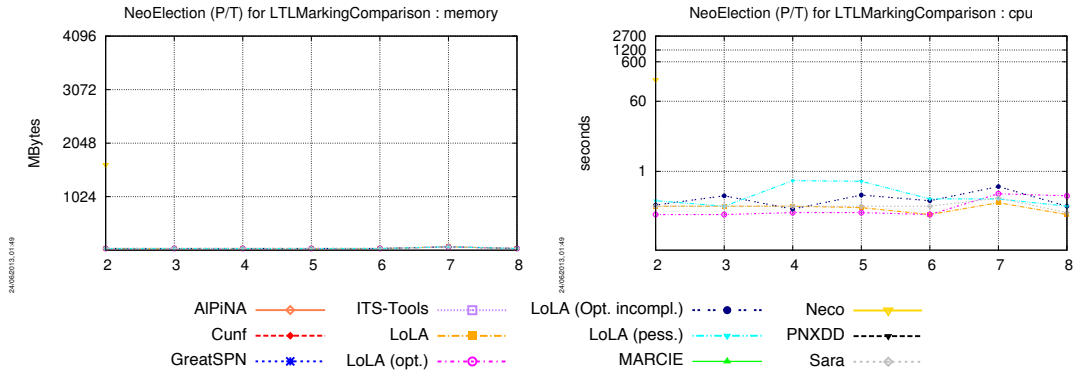
LamportFastMutEx (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

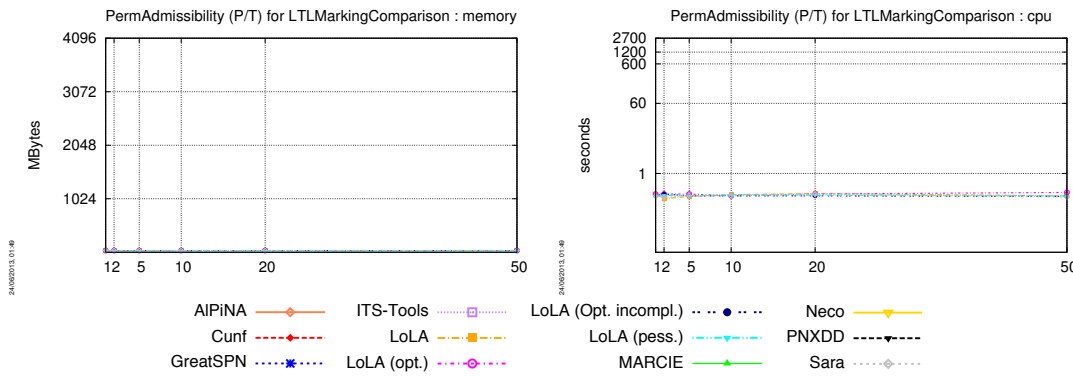
NeoElection (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

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



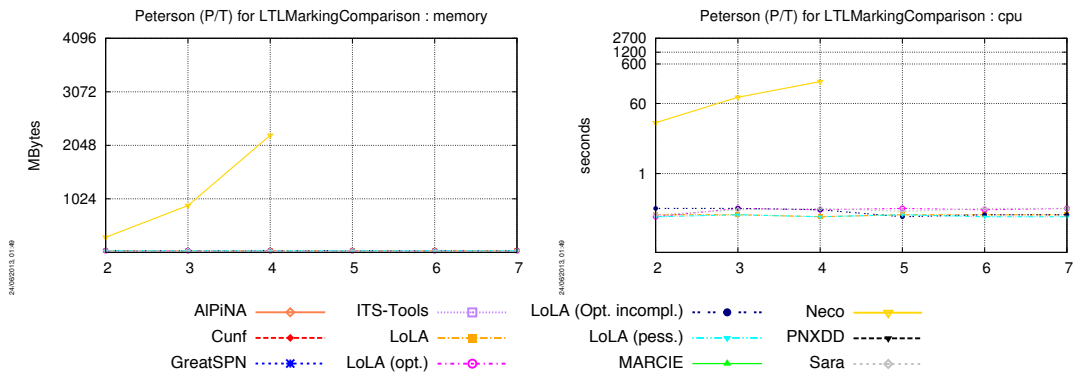
PermAdmissibility (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

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



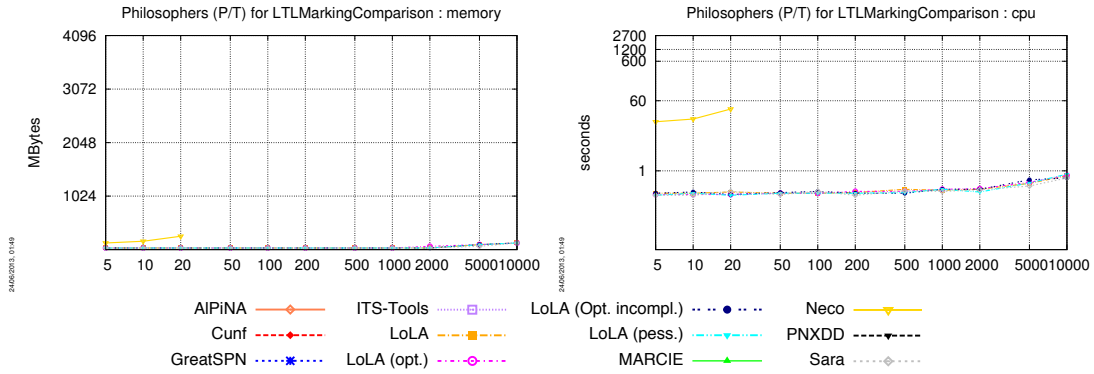
Peterson (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

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



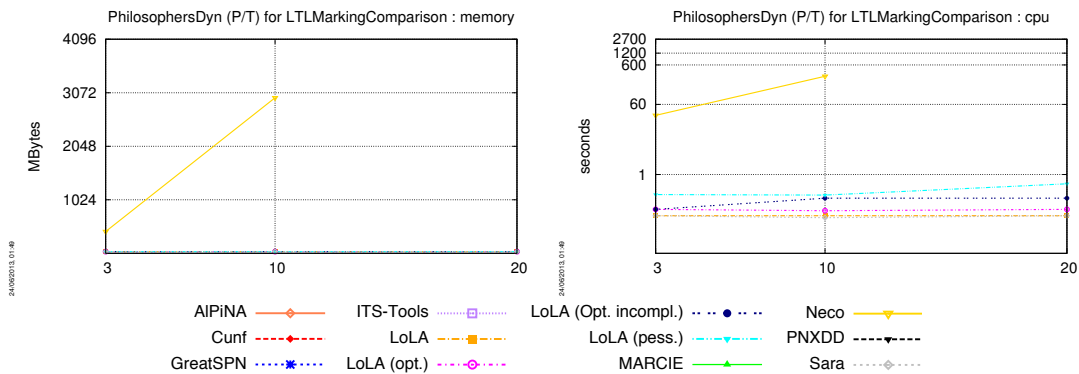
Philosophers (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

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.

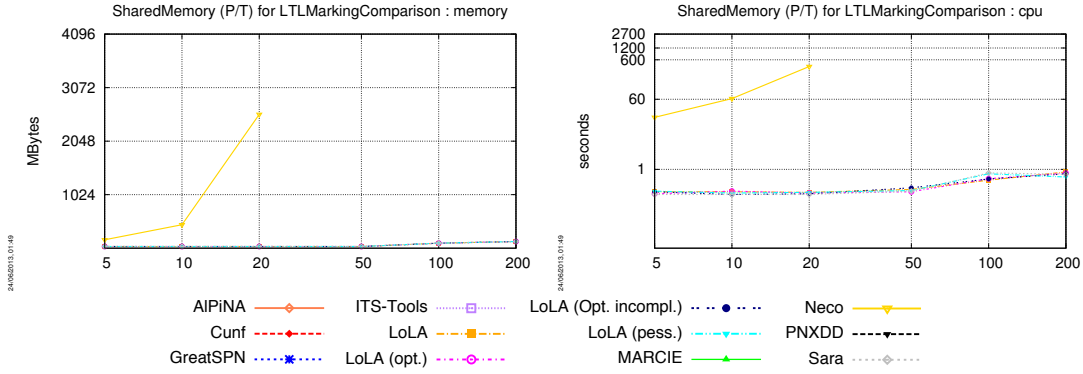
RessAllocation (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

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.

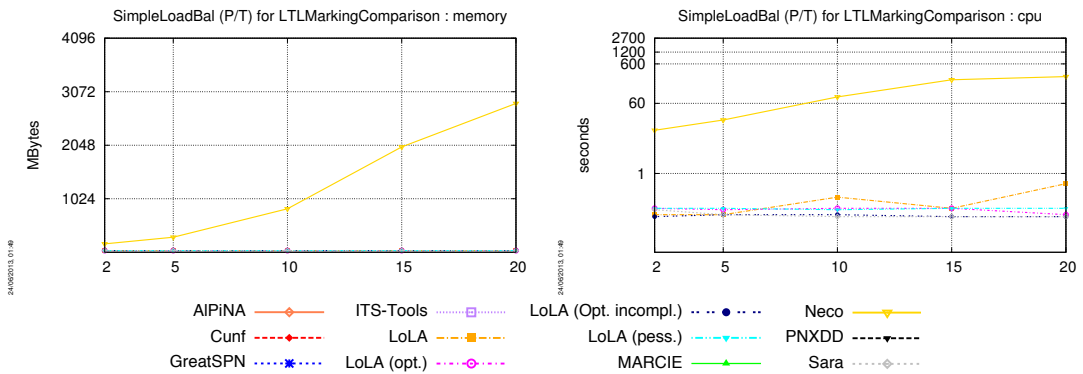
SharedMemory (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

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



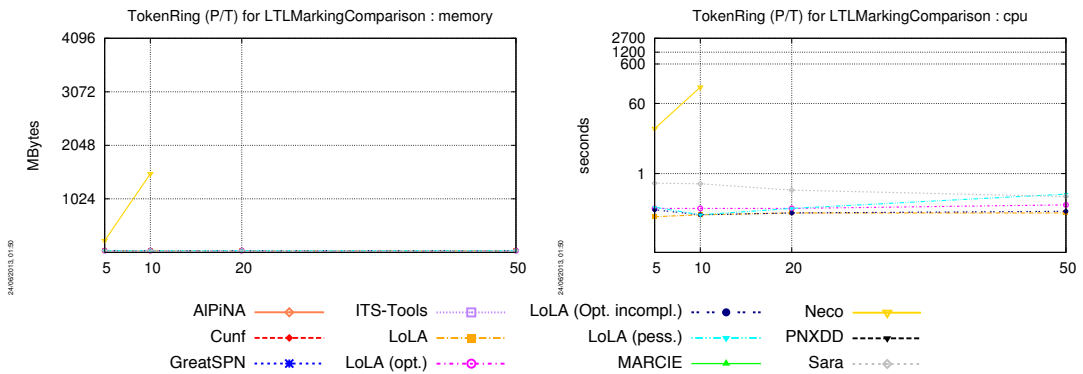
SimpleLoadBal (colored) No instance of this model could be computed for the **LTLMarkingComparison** examination.

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).

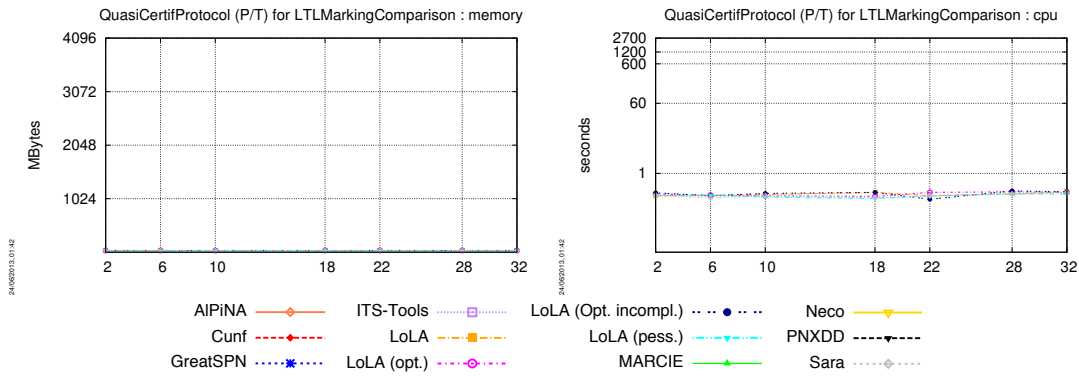


HouseConstruction (P/T) No instance of this model could be computed for the **LTLMarkingComparison** examination.

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.

Instances	CSRepetitions (colored)									
	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		FFFFFFF	cc
03	cc	cc			cc		cc		FFFFFFF	cc
04	cc	cc			cc		cc		FFFFFFF	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
GlobalResAlloc (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
GlobalResAlloc (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		FFFFFFF	cc
3	cc	cc			cc		cc		FFFFFFF	cc
4	cc	cc			cc		cc		FFFFFFF	cc
5	cc	cc			cc		cc		FFFFFFF	cc
6	cc	cc			cc		cc		FFFFFFF	cc
7	cc	cc			cc		cc		FFFFFFFT	cc
8	cc	cc			cc		cc		FFFFFFF	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		FFFFFFF	cc

3	cc	cc		cc		cc	cc	cc		
4	cc	cc		cc		cc	cc	cc	cc	cc
5	cc	cc		cc		cc	cc	cc	cc	cc
6	cc	cc		cc		cc	cc	cc	cc	cc
7	cc	cc		cc		cc	cc	cc	cc	cc
8	cc	cc		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		FFFFFF	cc
3	cc	cc			cc		cc		FFFFFF	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		FFFFFF	cc
000010	cc	cc			cc		cc		FFFFFF	cc
000020	cc	cc			cc		cc		FFFFFF	cc
000050	cc	cc			cc		cc		cc	cc
000100	cc	cc			cc		cc		cc	cc

000200	cc	cc		cc		cc	cc	cc	cc	
000500	cc	cc		cc		cc	cc	cc	cc	
001000	cc	cc		cc		cc	cc	cc	cc	
002000	cc	cc		cc		cc	cc	cc	cc	
005000	cc	cc		cc		cc	cc	cc	cc	
010000	cc	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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
03	cc	cc		cc		cc	cc	FFFTTFFF	cc	cc
10	cc	cc		cc		cc	cc	cc	cc	cc
20	cc	cc		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	nf	nf	nf
Railroad (P/T)										
Instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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
ResAllocation (P/T)										
Instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
R002C002	nf	nf		nf		nf	nf	nf	nf	nf
R003C002	nf	nf		nf		nf	nf	nf	nf	nf
R003C003	nf	nf		nf		nf	nf	nf	nf	nf
R003C005	nf	nf		nf		nf	nf	nf	nf	nf
R003C010	nf	nf		nf		nf	nf	nf	nf	nf
R003C015	nf	nf		nf		nf	nf	nf	nf	nf
R003C020	nf	nf		nf		nf	nf	nf	nf	nf
R003C050	nf	nf		nf		nf	nf	nf	nf	nf
R003C100	nf	nf		nf		nf	nf	nf	nf	nf
R005C002	nf	nf		nf		nf	nf	nf	nf	nf
R010C002	nf	nf		nf		nf	nf	nf	nf	nf
R015C002	nf	nf		nf		nf	nf	nf	nf	nf
R020C002	nf	nf		nf		nf	nf	nf	nf	nf
R050C002	nf	nf		nf		nf	nf	nf	nf	nf
R100C002	nf	nf		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	nf	nf
RwMutex (P/T)										
Instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
r0010w0010	nf	nf		nf		nf	nf	nf	nf	nf
r0010w0020	nf	nf		nf		nf	nf	nf	nf	nf
r0010w0050	nf	nf		nf		nf	nf	nf	nf	nf
r0010w0100	nf	nf		nf		nf	nf	nf	nf	nf
r0010w0500	nf	nf		nf		nf	nf	nf	nf	nf
r0010w1000	nf	nf		nf		nf	nf	nf	nf	nf
r0010w2000	nf	nf		nf		nf	nf	nf	nf	nf
r0020w0010	nf	nf		nf		nf	nf	nf	nf	nf
r0100w0010	nf	nf		nf		nf	nf	nf	nf	nf
r0500w0010	nf	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	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	FFFFFFF	cc
000010	cc	cc		cc	cc	FFFFFFF	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	FFFFFFF	cc
05	cc	cc		cc	cc	FFFFFFF	cc
10	cc	cc		cc	cc	FFFFFFF	cc
15	cc	cc		cc	cc	FFFFFFF	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	FFFFFFF	cc
010	cc	cc		cc	cc	FFFFFFF	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	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			
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
GlobalResAlloc (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	0	0	0	
best	0	0	0	0	0	0	0	0	0	
subtotal	0	0	0	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	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	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	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	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	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	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	0	0	0	1	0	0
instances	0	0	0	0	0	0	0	7	0	0
max reached	0	0	0	0	0	0	0	2	0	0
best	0	0	0	0	0	0	0	2	0	0
subtotal	0	0	0	0	0	0	0	12	0	0
MAPK (P/T)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
1st instance	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	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	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	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	0	1	0	0
instances	0	0	0	0	0	0	0	1	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	2	0	0
subtotal	0	0	0	0	0	0	0	4	0	0
PermAdmissibility (Colored)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
1st instance	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	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)										
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)										
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)										
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)										
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)										
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)										
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)										
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)										
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	0	0	0	
subtotal	0	0	0	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	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	
Ring (P/T)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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	
RwMutex (P/T)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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 (Colored)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
1st instance	0	0	0	0	0	0	0	1	0	
instances	0	0	0	0	0	0	0	2	0	
max reached	0	0	0	0	0	0	0	0	0	
best	0	0	0	0	0	0	0	2	0	
subtotal	0	0	0	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	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	
SimpleLoadBal (P/T)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
1st instance	0	0	0	0	0	0	0	1	0	
instances	0	0	0	0	0	0	0	4	0	
max reached	0	0	0	0	0	0	0	0	0	
best	0	0	0	0	0	0	0	2	0	
subtotal	0	0	0	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	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)										
	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										
Total Score	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
HouseConstruction (P/T)										
1st instance	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0	0	0
IBMB2S565S3960 (P/T)										
1st instance	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0	0	0
QuasiCertifProtocol (Colored)										
1st instance	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0	0	0
QuasiCertifProtocol (P/T)										
1st instance	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	0	0	0	0	0
Vasy2003 (P/T)										
1st instance	0	0	0	0	0	0	0	0	0	0
instances	0	0	0	0	0	0	0	0	0	0
max reached	0	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	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

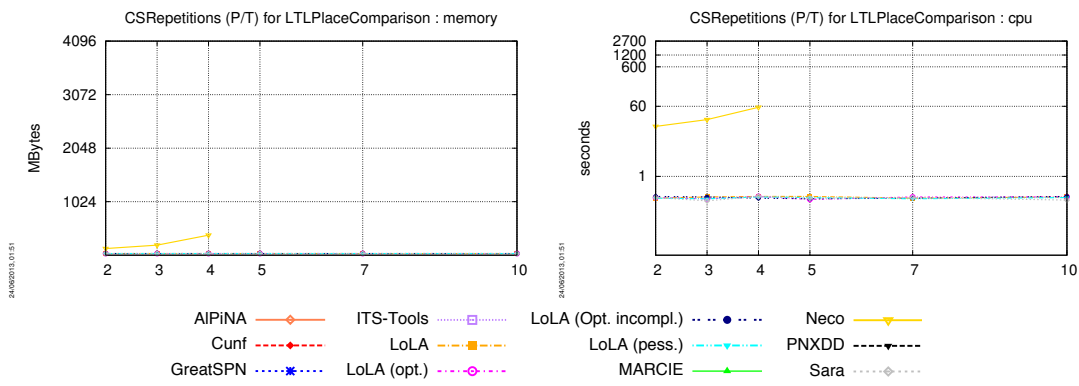
21 The LTLPlaceComparison Examination

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.

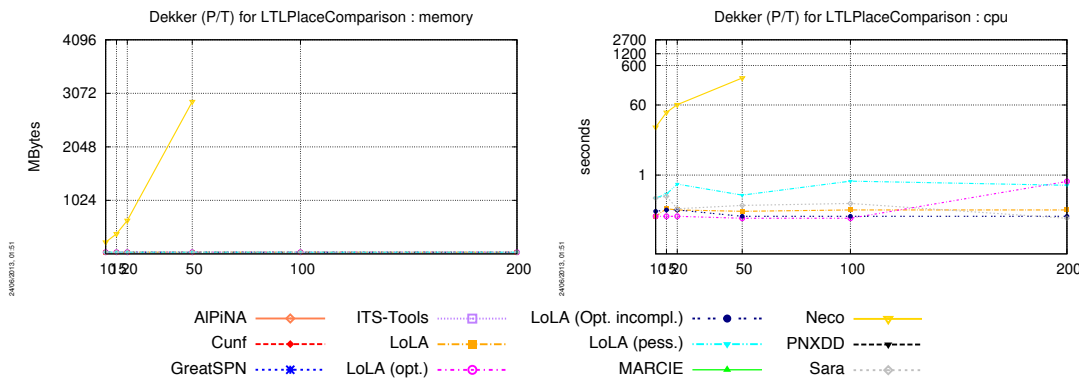
21.1 Handling of Models by Tools

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).



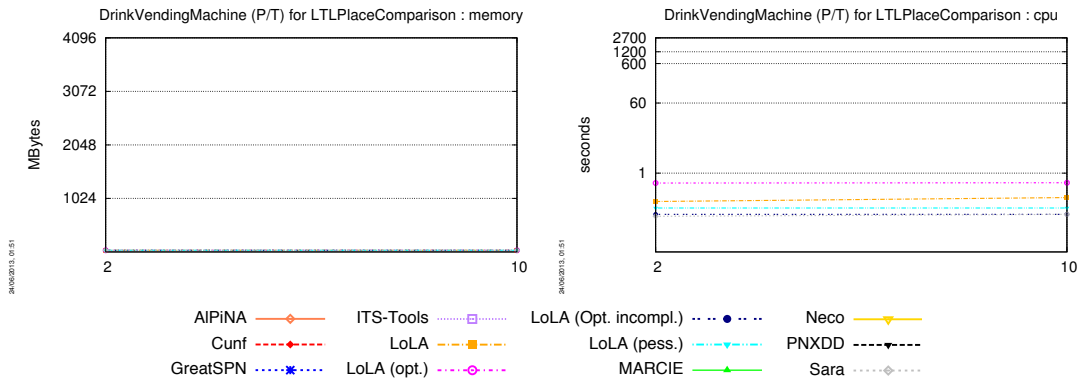
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



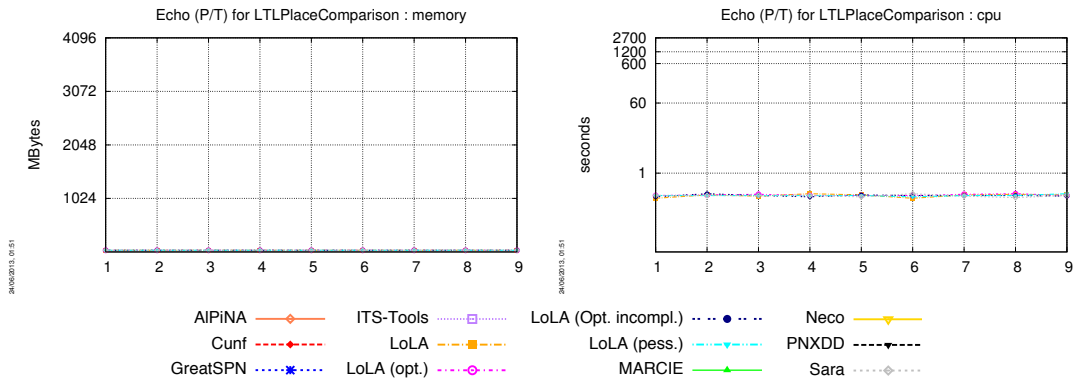
DotAndBoxes (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

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

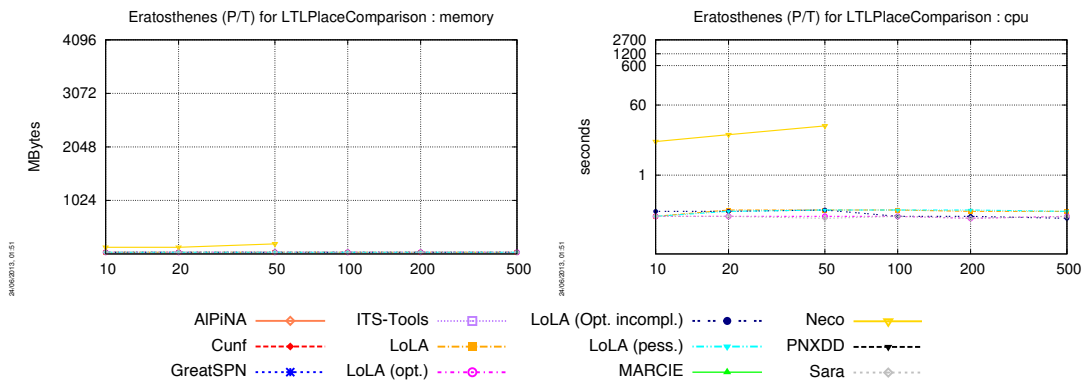
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



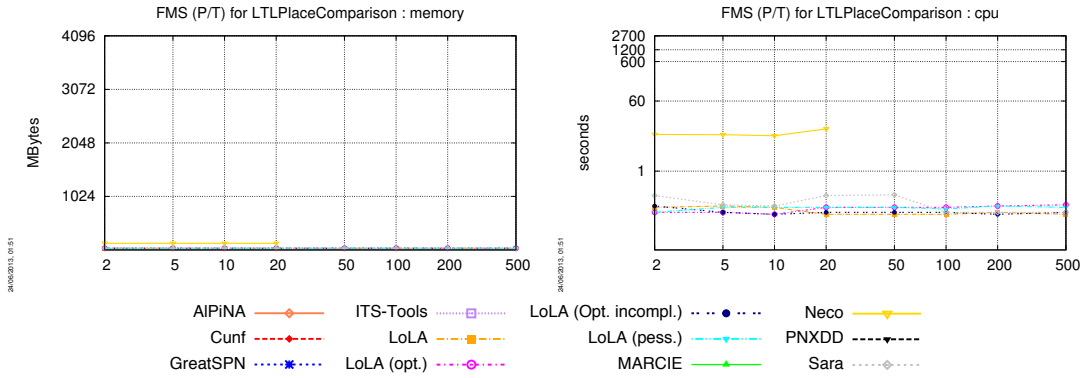
Echo (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

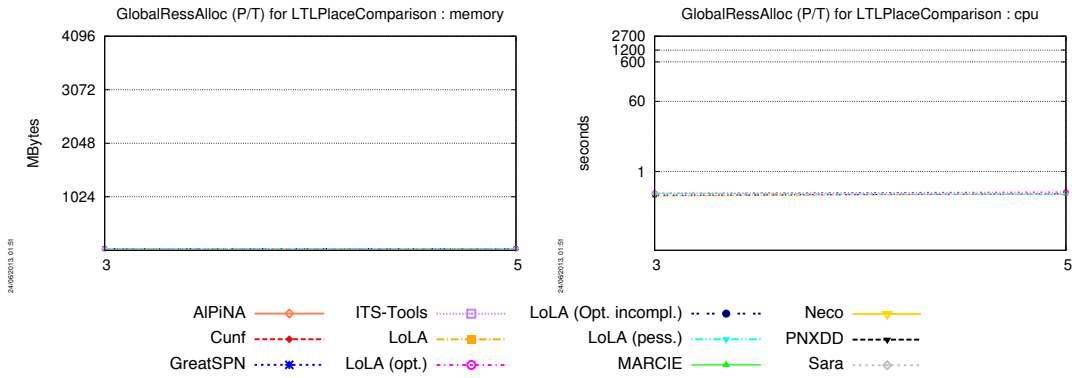


FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

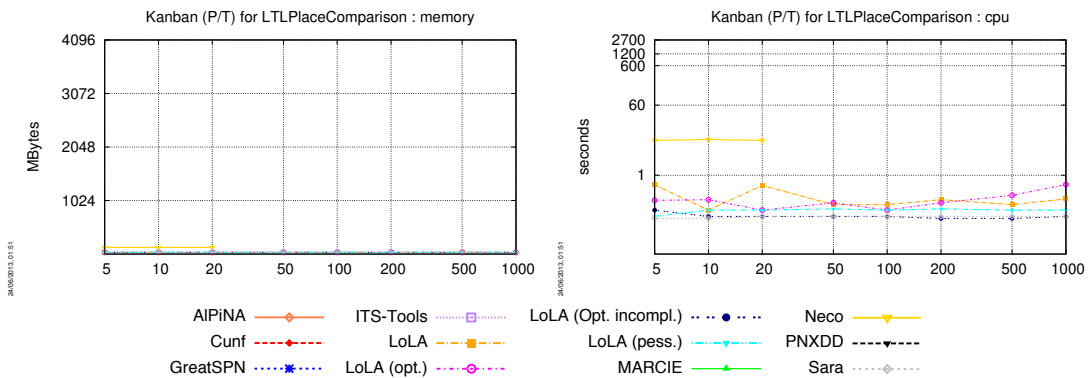


GlobalRessAlloc (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

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

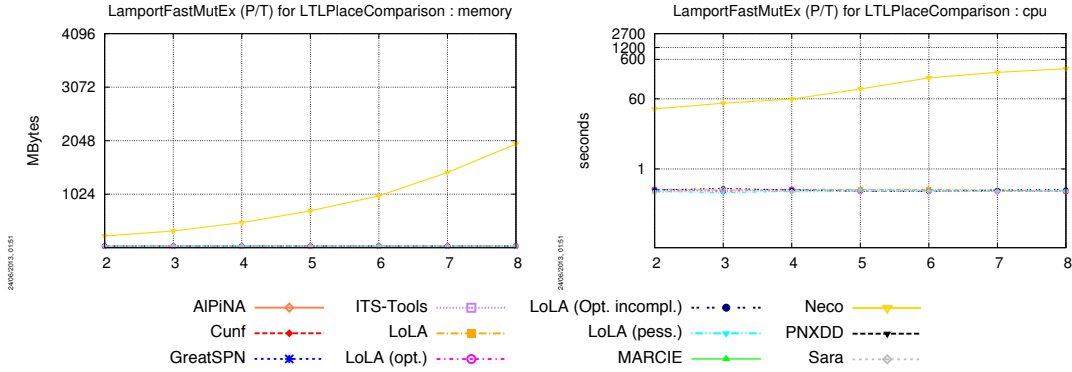


Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

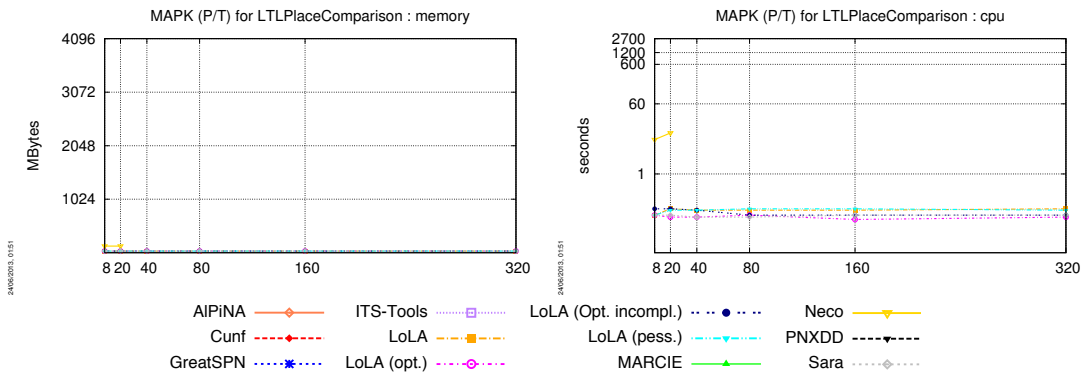


LamportFastMutEx (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

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

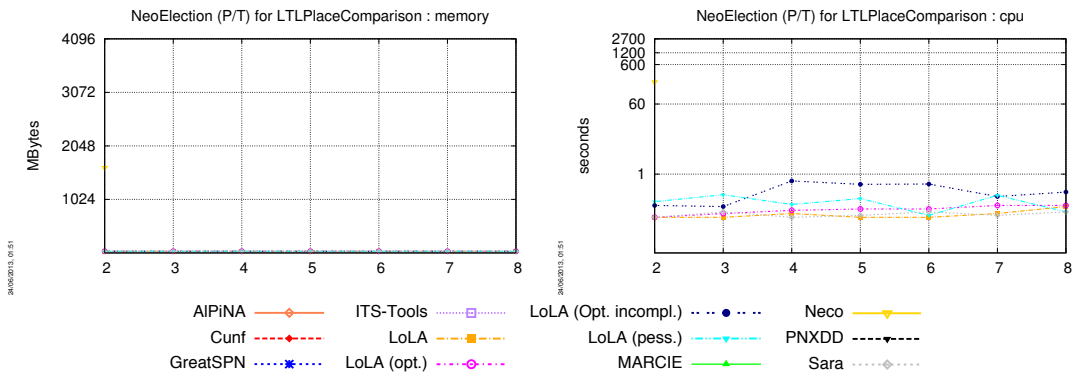


MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



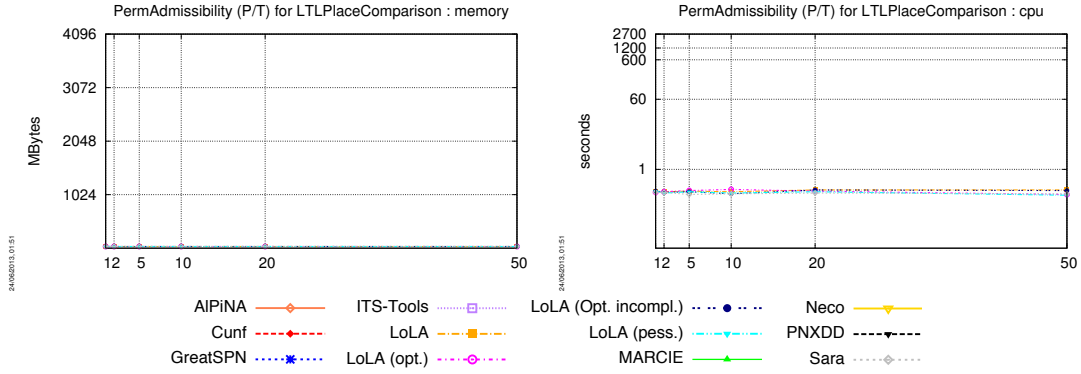
NeoElection (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

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



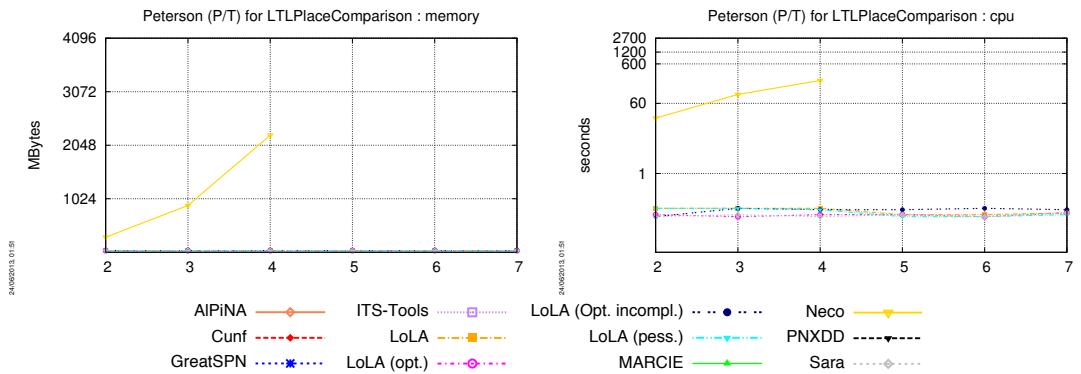
PermAdmissibility (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

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



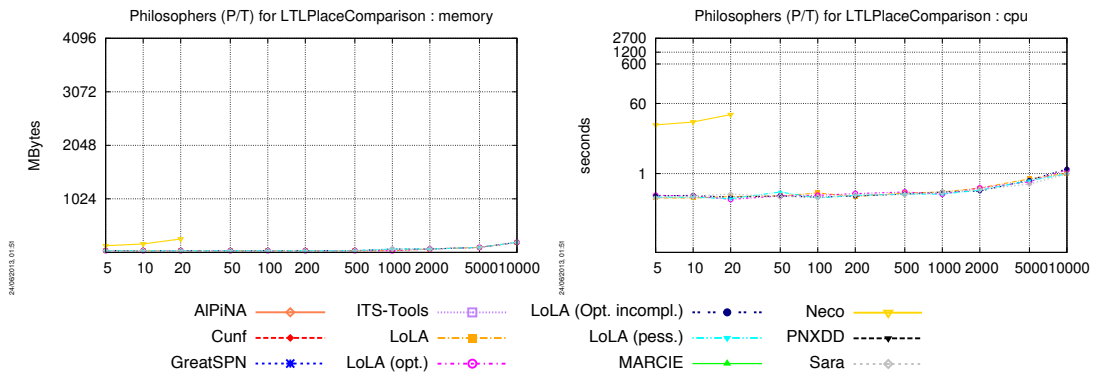
Peterson (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

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



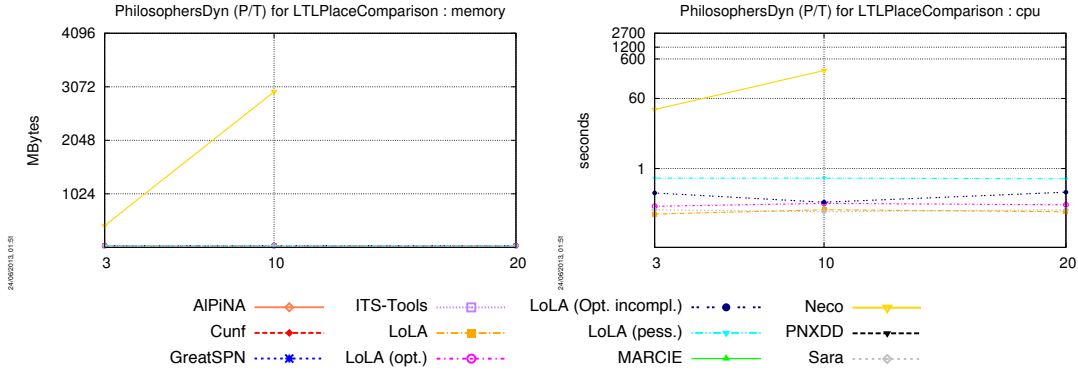
Philosophers (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

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



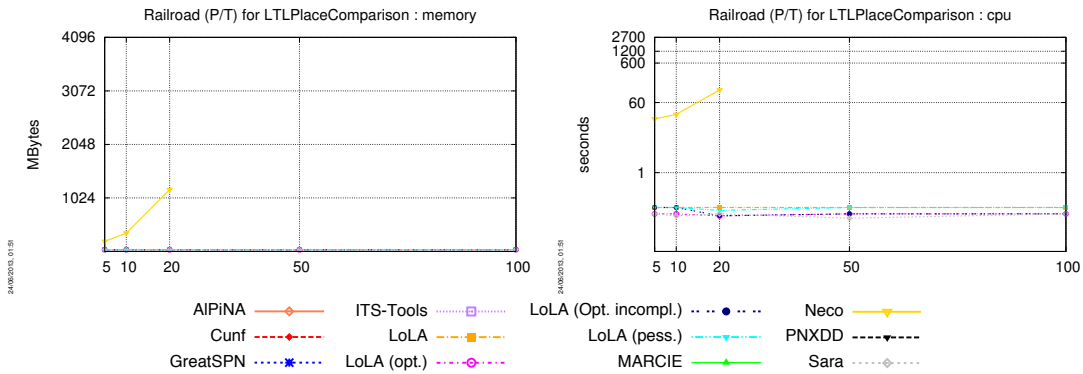
PhilosophersDyn (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

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

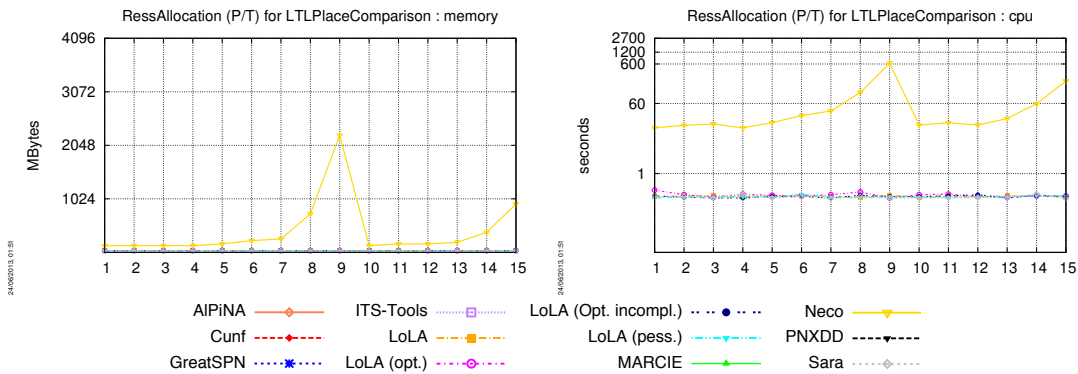


Planning (P/T) No instance of this model could be computed for the **LTLPlaceComparison** examination.

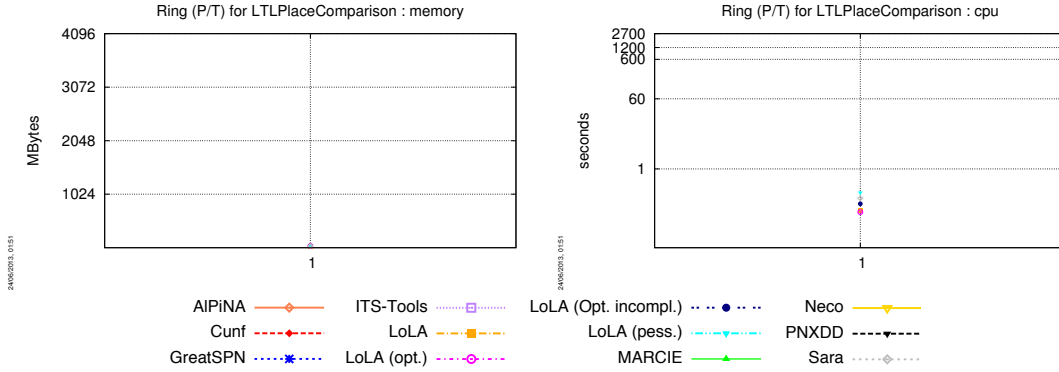
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



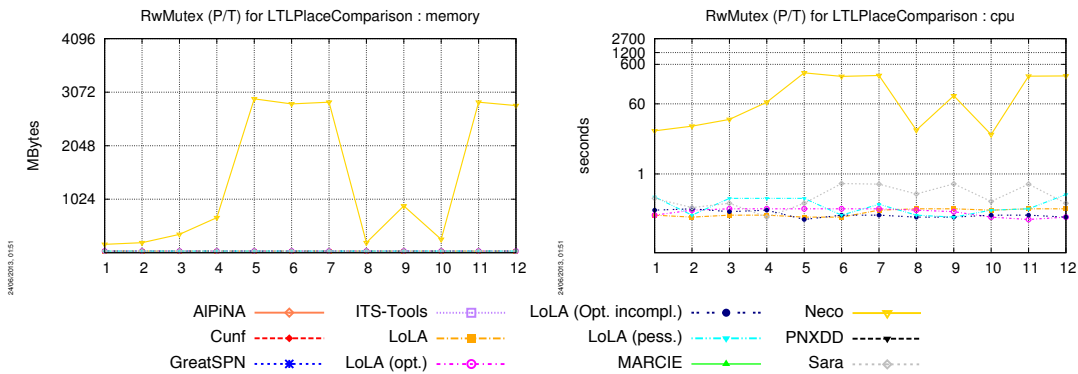
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

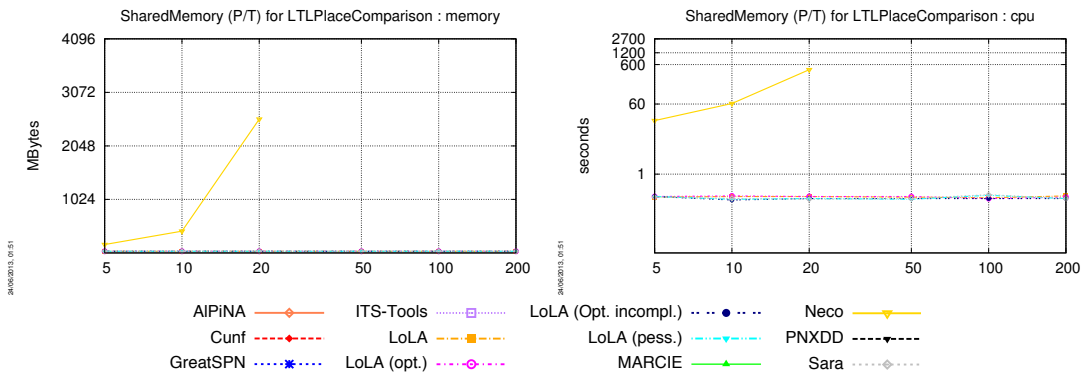


RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



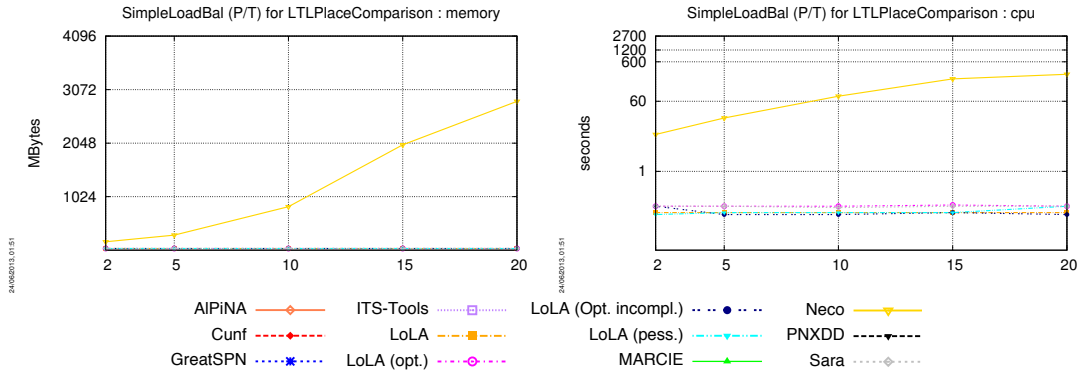
SharedMemory (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

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.

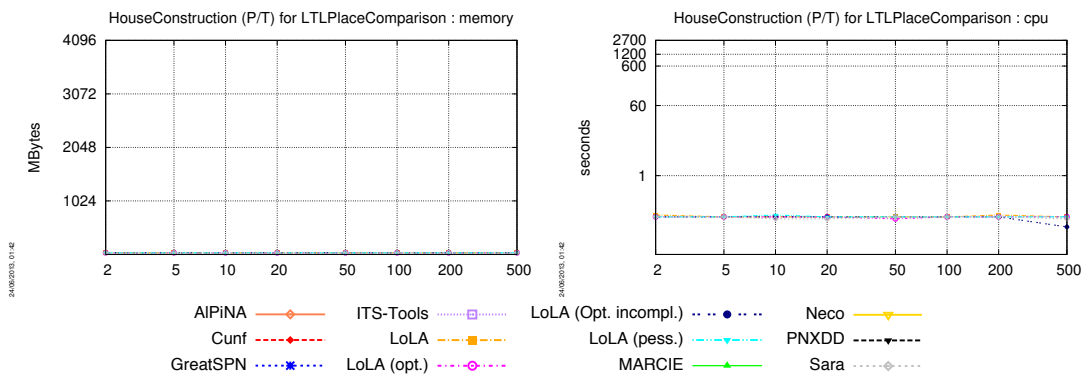
SimpleLoadBal (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



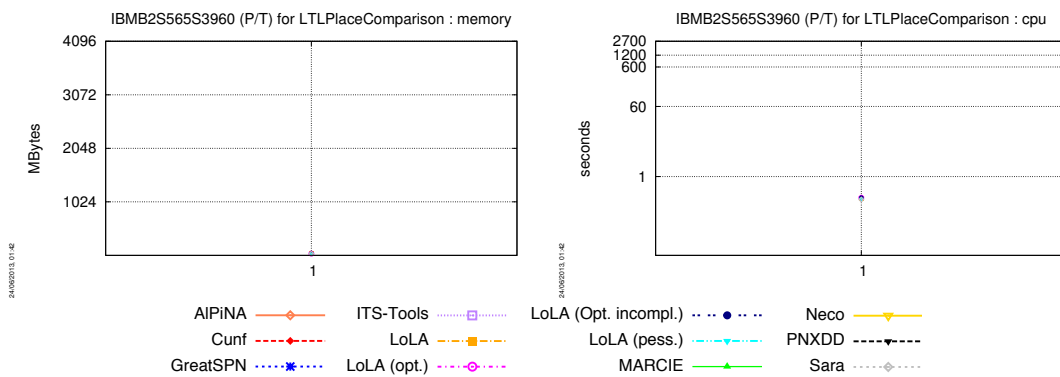
TokenRing (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

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).

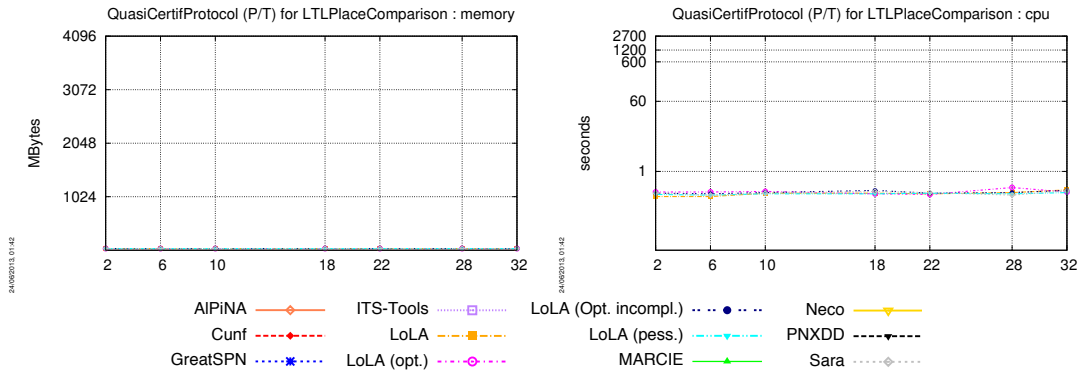


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

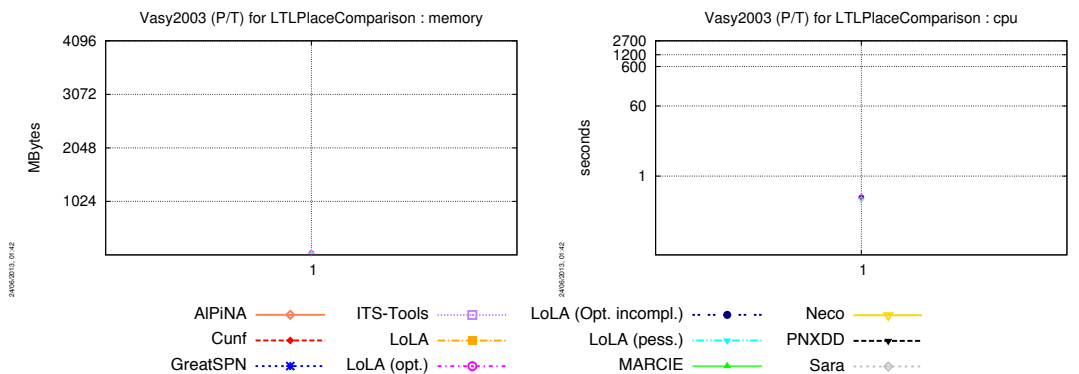


QuasiCertifProtocol (colored) No instance of this model could be computed for the **LTLPlaceComparison** examination.

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 “Suprise” 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	pass	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	pass	Neco	Sara
02	cc	cc			cc		cc		FFFTFFF	cc
03	cc	cc			cc		cc		FFFTFFF	cc
04	cc	cc			cc		cc		FFFTFFF	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	pass	Neco	Sara
010	cc	cc			cc		cc		TFFTTF	cc
015	cc	cc			cc		cc		FTFTFFF	cc
020	cc	cc			cc		cc		FTFTFFF	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	pass	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	pass	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	pass	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	pass	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	pass	Neco	Sara
010	cc	cc			cc		cc		FTFTFFF	cc
020	cc	cc			cc		cc		TFFTFFF	cc
050	cc	cc			cc		cc		FFFTFFF	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	pass	Neco	Sara
002	cc	cc			cc		cc		FTFTTTT	cc

005	cc	cc		cc		cc	FTTTTTFF	cc		
010	cc	cc		cc		cc	FTTTTTFF	cc		
020	cc	cc		cc		cc	TTTTTTTT	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		
GlobalResAlloc (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
GlobalResAlloc (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	FTTTTTFF	cc
0010	cc	cc			cc			cc	FFFFFFTF	cc
0020	cc	cc			cc			cc	FTTTTTFF	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	FFFFFFTF	cc
3	cc	cc			cc			cc	FFFFFFTF	cc
4	cc	cc			cc			cc	FFFFFFTF	cc
5	cc	cc			cc			cc	FFFFFFTF	cc
6	cc	cc			cc			cc	FFFFFFTF	cc
7	cc	cc			cc			cc	FFFFFFTF	cc
8	cc	cc			cc			cc	FFFFFFTF	cc
MAPK (P/T)										
Instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
008	cc	cc			cc			cc	FTTTTTFF	cc
020	cc	cc			cc			cc	FFFFFFTF	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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
2	cc	cc		cc			cc	FFFFFFF	cc	
3	cc	cc		cc			cc	cc	cc	cc
4	cc	cc		cc			cc	cc	cc	cc
5	cc	cc		cc			cc	cc	cc	cc
6	cc	cc		cc			cc	cc	cc	cc
7	cc	cc		cc			cc	cc	cc	cc
8	cc	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	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	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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
2	cc	cc		cc			cc	FFFFFFF	cc	
3	cc	cc		cc			cc	FFFFFFF	cc	
4	cc	cc		cc			cc	cc	cc	cc
5	cc	cc		cc			cc	cc	cc	cc
6	cc	cc		cc			cc	cc	cc	cc
7	cc	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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa
	pess	Neco	Sara				
000005	cc	cc		cc		cc	FFFFFFF cc
000010	cc	cc		cc		cc	FFFFFFF cc
000020	cc	cc		cc		cc	FFFFFFF 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	FFFFFFF 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	FTFTFTT cc
010	cc	cc		cc		cc	FTTFTFF cc
020	cc	cc		cc		cc	TFTFTFF cc
050	cc	cc		cc		cc	cc cc
100	cc	cc		cc		cc	cc cc
ResAllocation (P/T)							
Instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa
	pess	Neco	Sara				
R002C002	cc	cc		cc		cc	FTTFTFF cc
R003C002	cc	cc		cc		cc	FTTFTFF cc
R003C003	cc	cc		cc		cc	TFTFTFF cc
R003C005	cc	cc		cc		cc	FFFFTFF cc
R003C010	cc	cc		cc		cc	FTFTFFF cc
R003C015	cc	cc		cc		cc	FTFTFFF cc
R003C020	cc	cc		cc		cc	TFTFTFF cc
R003C050	cc	cc		cc		cc	FTFTFTF cc
R003C100	cc	cc		cc		cc	TFTFTFF cc
R005C002	cc	cc		cc		cc	FTFTFTT cc
R010C002	cc	cc		cc		cc	FTFTFTT cc
R015C002	cc	cc		cc		cc	TTTTFTT cc
R020C002	cc	cc		cc		cc	FTFTFFF cc
R050C002	cc	cc		cc		cc	FTFTFFF cc
R100C002	cc	cc		cc		cc	FFFTFTF 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	FTFTFTF cc
r0010w0020	cc	cc		cc		cc	FTTFTFF cc

r0010w0050	cc	cc	cc	cc	TTTTTTT	cc				
r0010w0100	cc	cc	cc	cc	TTTTFFF	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	FTFTFFF	cc				
r0100w0010	cc	cc	cc	cc	TTTTTTF	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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
000005	cc	cc		cc		cc	cc	FFFFFFF	cc	cc
000010	cc	cc		cc		cc	cc	FFFFFFF	cc	cc
000020	cc	cc		cc		cc	cc	cc	cc	cc
000050	cc	cc		cc		cc	cc	cc	cc	cc
000100	cc	cc		cc		cc	cc	cc	cc	cc
000200	cc	cc		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	nc	nc
05	nc	nc		nc		nc	nc	nc	nc	nc
10	nc	nc		nc		nc	nc	nc	nc	nc
15	nc	nc		nc		nc	nc	nc	nc	nc
20	nc	nc		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	cc	FFFFFFF	cc	cc
05	cc	cc		cc		cc	cc	FFFFFFF	cc	cc
10	cc	cc		cc		cc	cc	FFFFFFF	cc	cc
15	cc	cc		cc		cc	cc	FFFFFFF	cc	cc
20	cc	cc		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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
005	nf	nf		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
002	cc	cc			cc		cc
005	cc	cc			cc		cc
010	cc	cc			cc		cc
020	cc	cc			cc		cc
050	cc	cc			cc		cc
100	cc	cc			cc		cc
200	cc	cc			cc		cc
500	cc	cc			cc		cc
IBMB2S565S3960 (P/T)							
instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa
none	cc	cc			cc		cc
QuasiCertifProtocol (colored)							
instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa
02	nc	nc			nc		nc
06	nc	nc			nc		nc
10	nc	nc			nc		nc
18	nc	nc			nc		nc
22	nc	nc			nc		nc
28	nc	nc			nc		nc
32	nc	nc			nc		nc
QuasiCertifProtocol (P/T)							
instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa
02	cc	cc			cc		cc
06	cc	cc			cc		cc
10	cc	cc			cc		cc
18	cc	cc			cc		cc
22	cc	cc			cc		cc
28	cc	cc			cc		cc
32	cc	cc			cc		cc
Vasy2003 (P/T)							
instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa
none	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

Total Score	0	0	0	0	114	0
CSRepetitions (Colored)						
	LoLA	LoLa	opt	LoLa	opt	inc
	LoLa	opt	LoLa	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	opt	LoLa	inc	LoLa	pess
	Neco	Sara				
1st instance	0	0	0	0	0	1
instances	0	0	0	0	0	3
max reached	0	0	0	0	0	0
best	0	0	0	0	0	2
subtotal	0	0	0	0	0	6
Dekker (P/T)						
	LoLA	LoLa	opt	LoLa	opt	inc
	LoLa	opt	LoLa	inc	LoLa	pess
	Neco	Sara				
1st instance	0	0	0	0	0	1
instances	0	0	0	0	0	3
max reached	0	0	0	0	0	0
best	0	0	0	0	0	2
subtotal	0	0	0	0	0	6
DotAndBoxes (Colored)						
	LoLA	LoLa	opt	LoLa	opt	inc
	LoLa	opt	LoLa	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	opt	LoLa	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	opt	LoLa	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	opt	LoLa	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	opt	LoLa	inc	LoLa	pess
	Neco	Sara				
1st instance	0	0	0	0	0	1
instances	0	0	0	0	0	3
max reached	0	0	0	0	0	0
best	0	0	0	0	0	2
subtotal	0	0	0	0	0	6
FMS (P/T)						
	LoLA	LoLa	opt	LoLa	opt	inc
	LoLa	opt	LoLa	inc	LoLa	pess
	Neco	Sara				
1st instance	0	0	0	0	0	1

instances	0	0	0	0	4	0		
max reached	0	0	0	0	0	0		
best	0	0	0	0	0	2		
subtotal	0	0	0	0	0	7	0	
GlobalResAlloc (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
GlobalResAlloc (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	0	0	0	0	0
best	0	0	0	0	0	0	0	0	0	0	0
subtotal	0	0	0	0	0	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

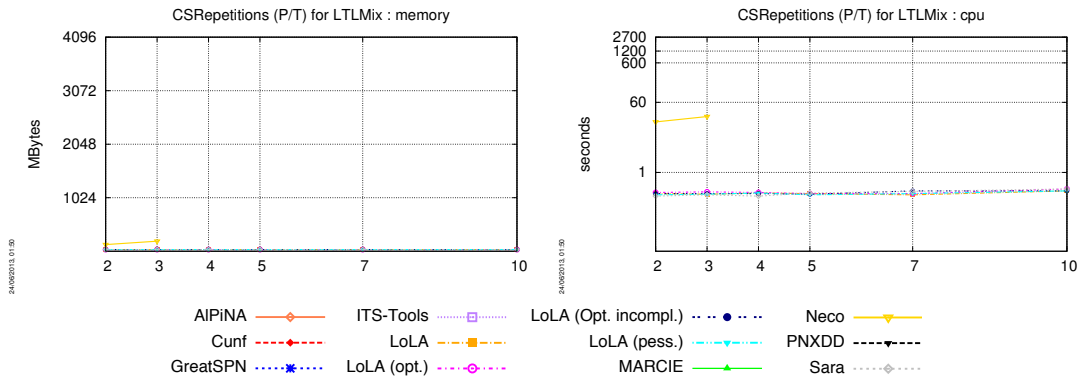
22 The LTLMix Examination

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.

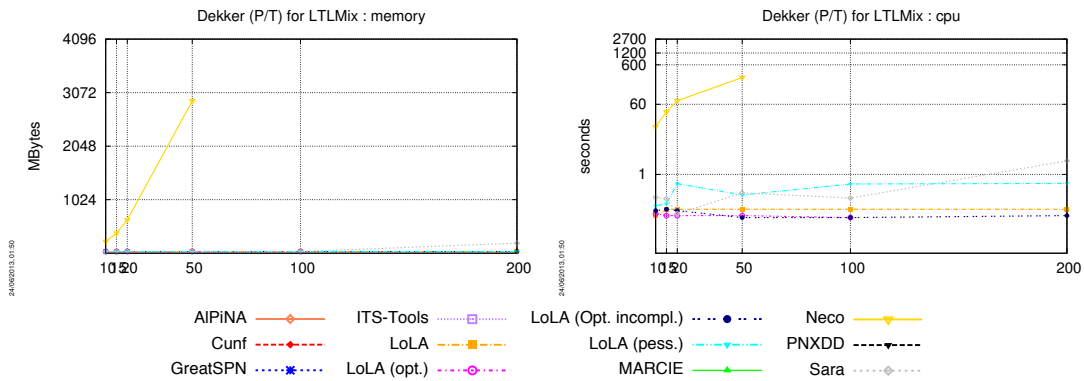
22.1 Handling of Models by Tools

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).



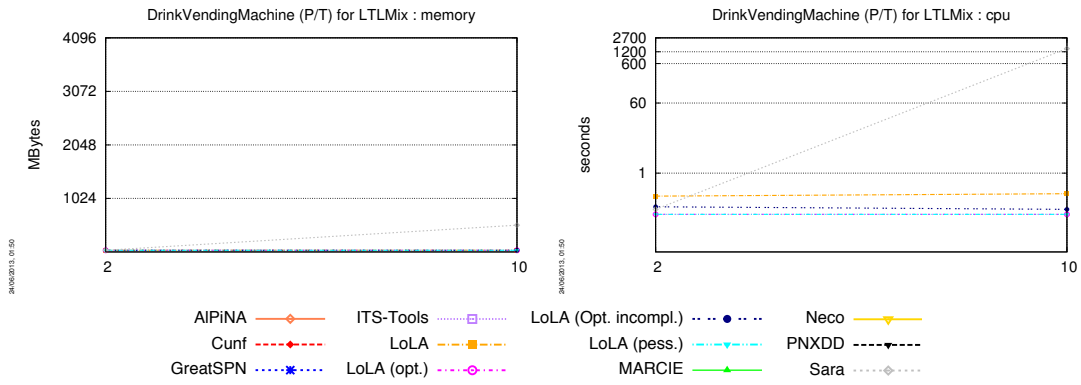
Dekker (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



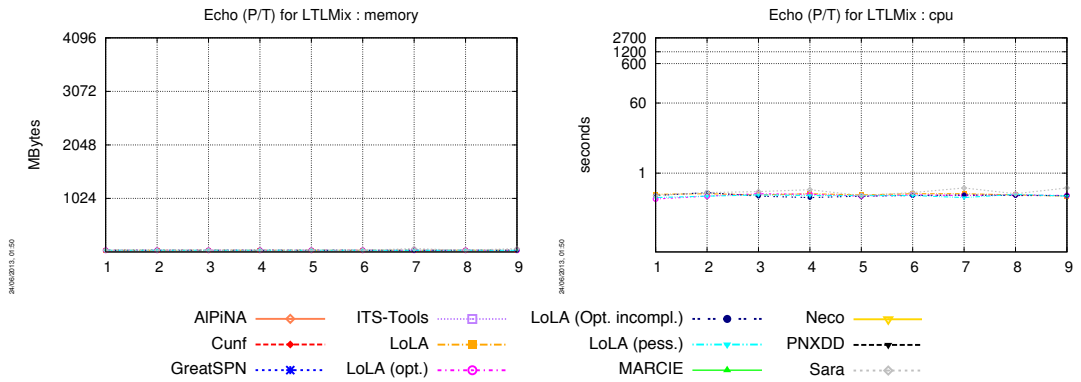
DotAndBoxes (colored) No instance of this model could be computed for the **LTLMix** examination.

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

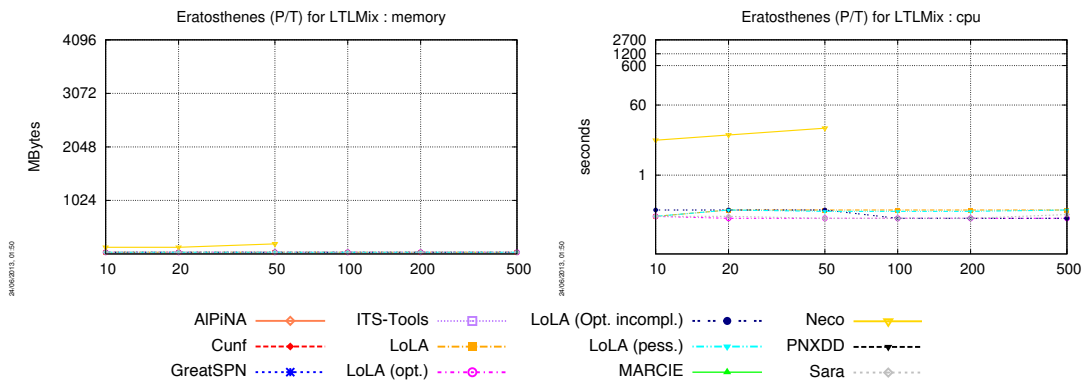
DrinkVendingMachine (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



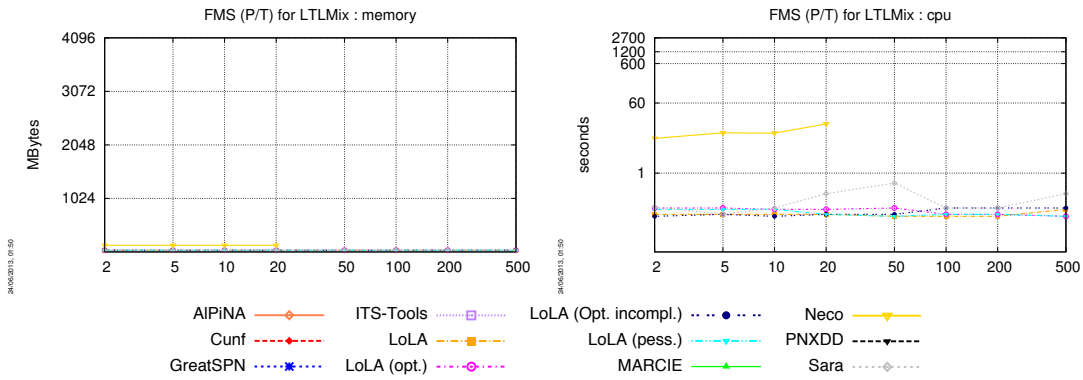
Echo (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

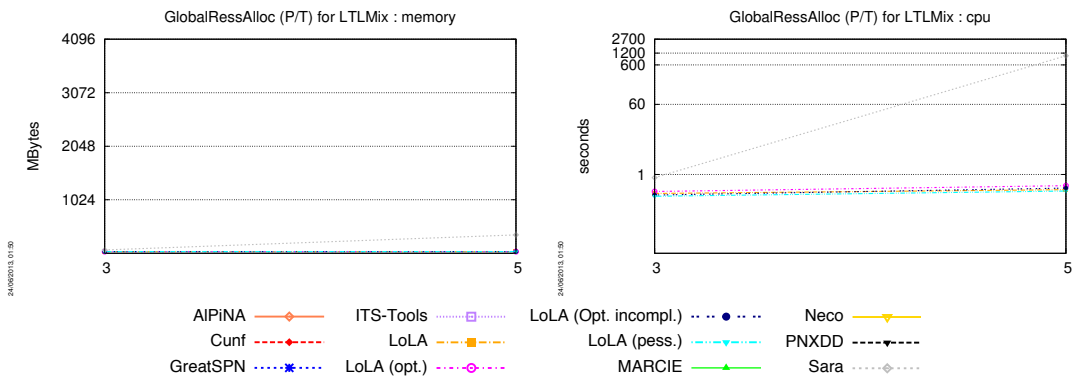


FMS (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

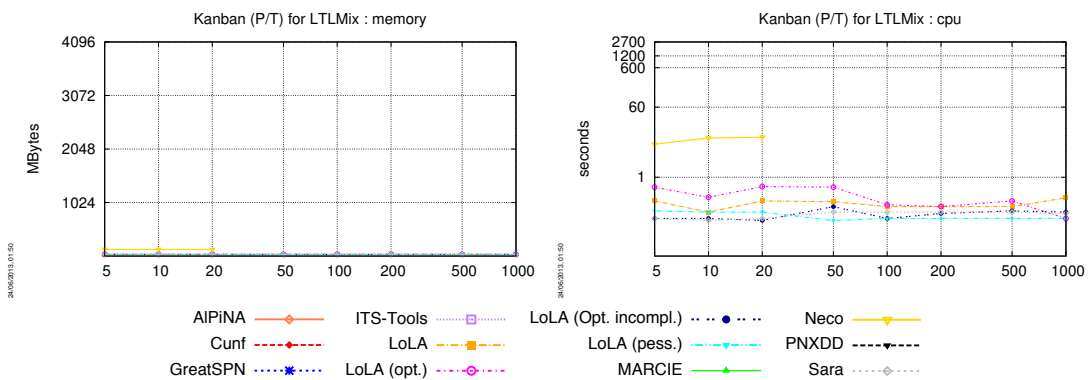


GlobalResAlloc (colored) No instance of this model could be computed for the **LTLMix** examination.

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

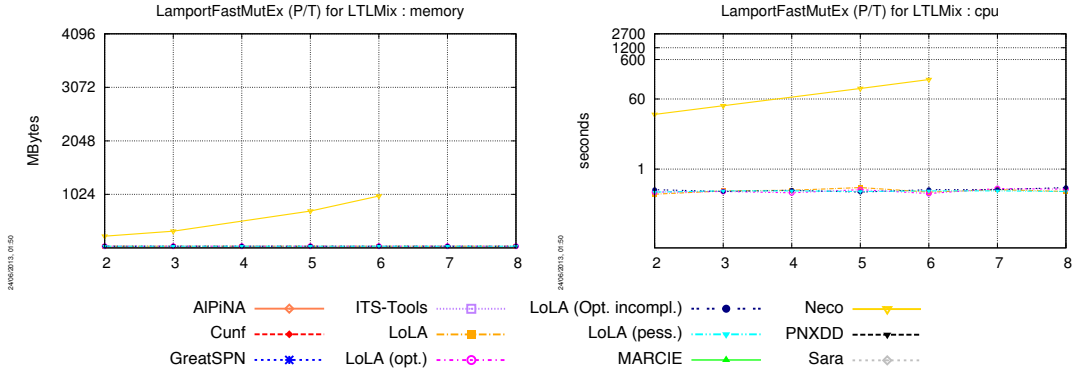


Kanban (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).

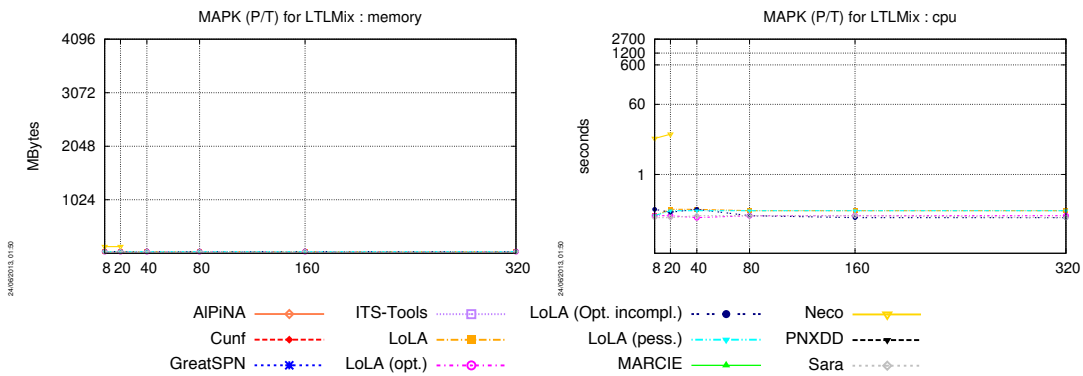


LamportFastMutEx (colored) No instance of this model could be computed for the **LTLMix** examination.

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

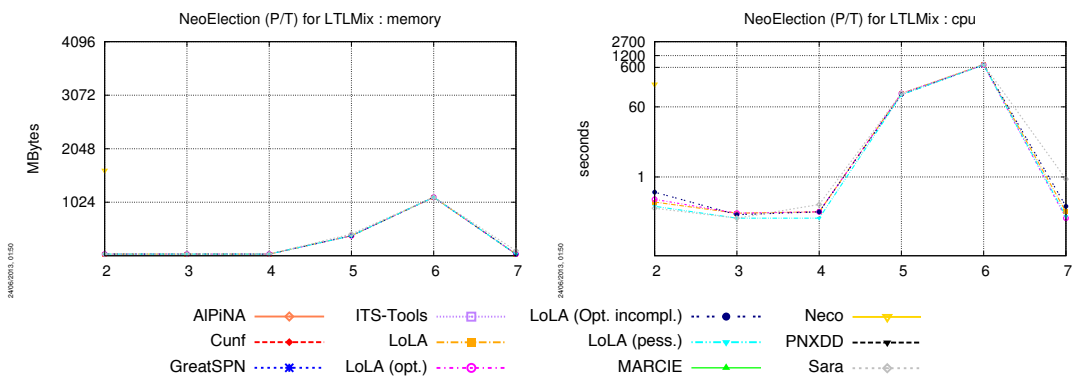


MAPK (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



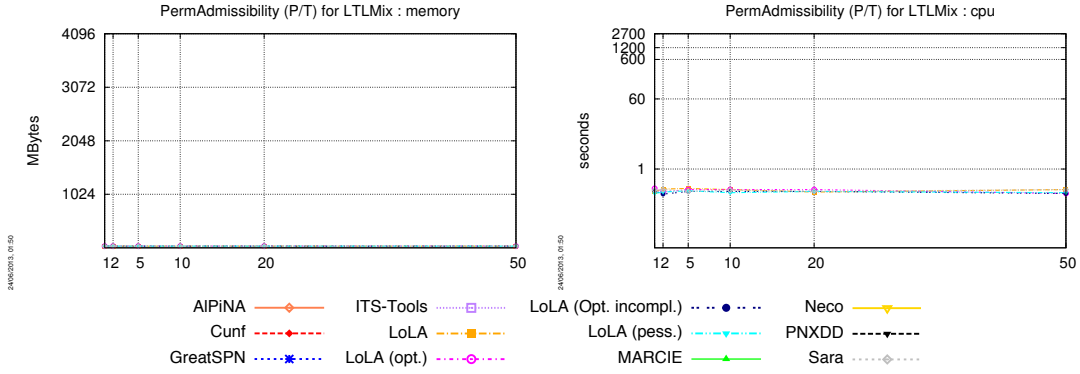
NeoElection (colored) No instance of this model could be computed for the **LTLMix** examination.

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



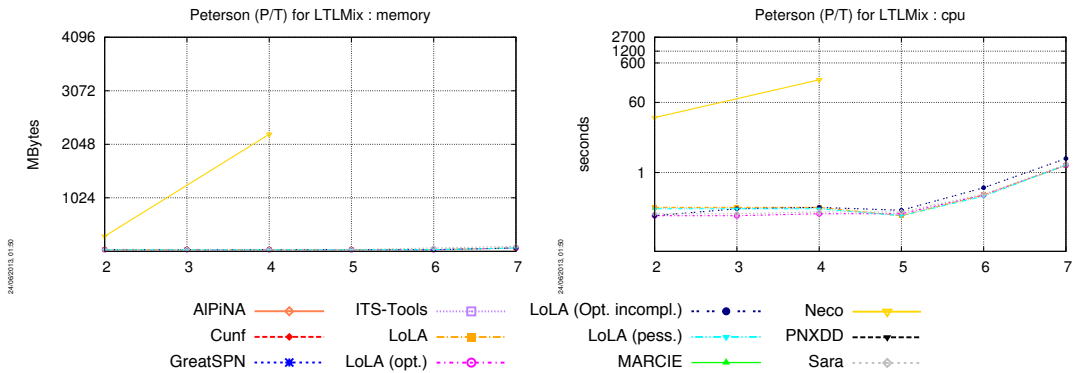
PermAdmissibility (colored) No instance of this model could be computed for the **LTLMix** examination.

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



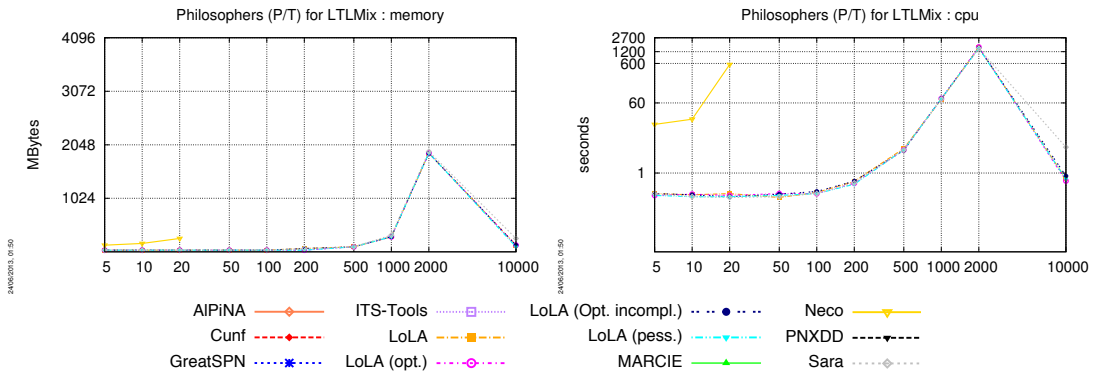
Peterson (colored) No instance of this model could be computed for the **LTLMix** examination.

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



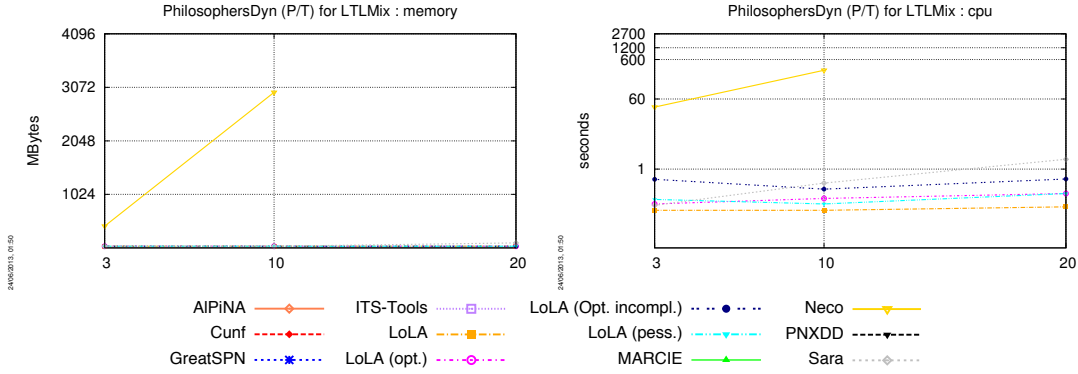
Philosophers (colored) No instance of this model could be computed for the **LTLMix** examination.

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



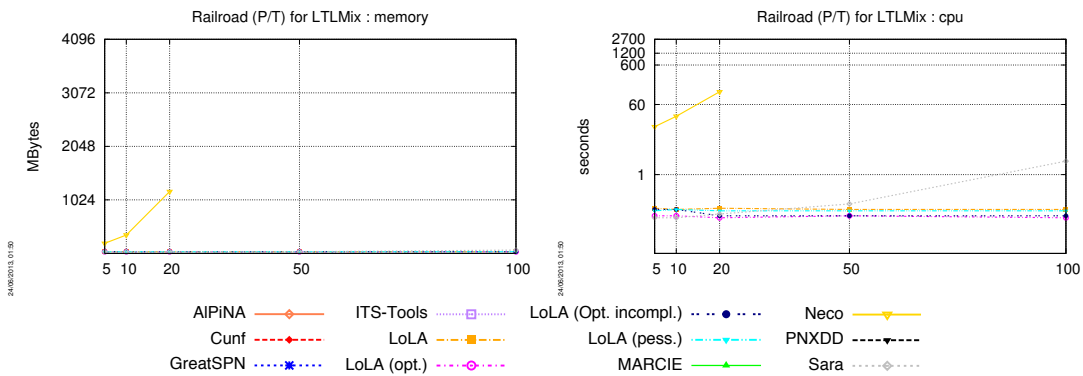
PhilosophersDyn (colored) No instance of this model could be computed for the **LTLMix** examination.

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

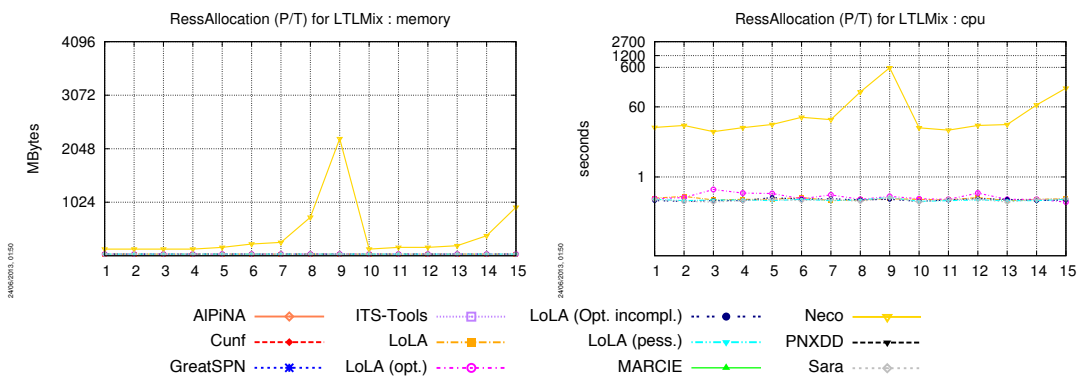


Planning (P/T) No instance of this model could be computed for the **LTLMix** examination.

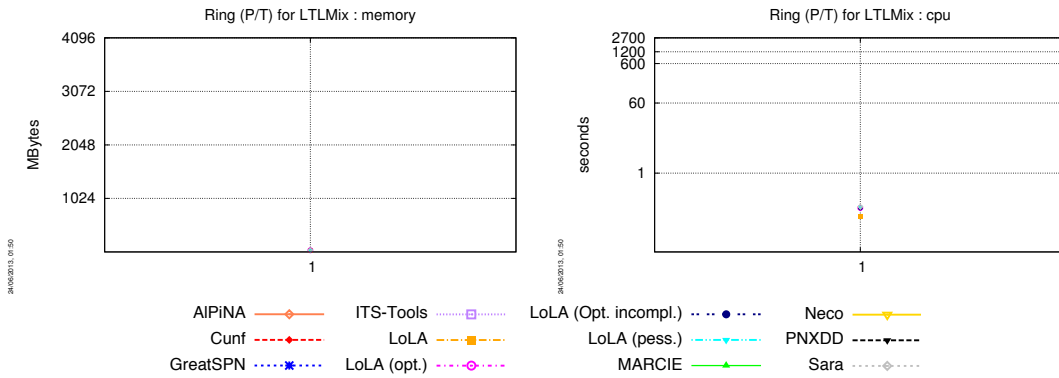
Railroad (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



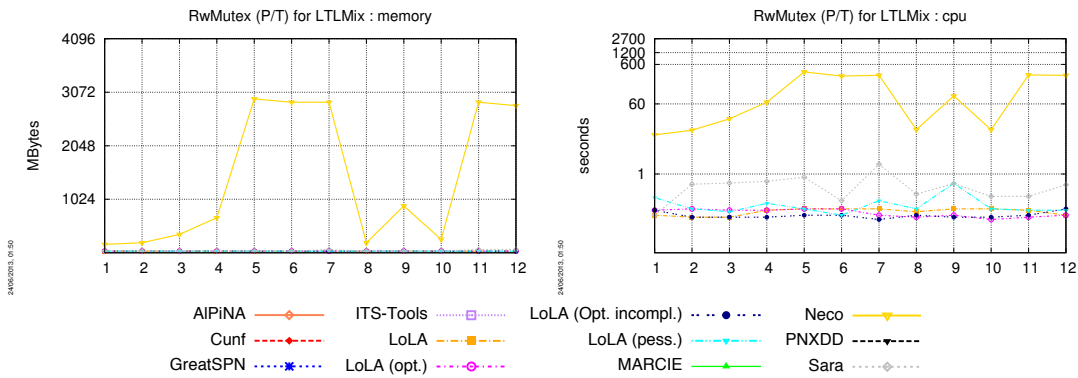
RessAllocation (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

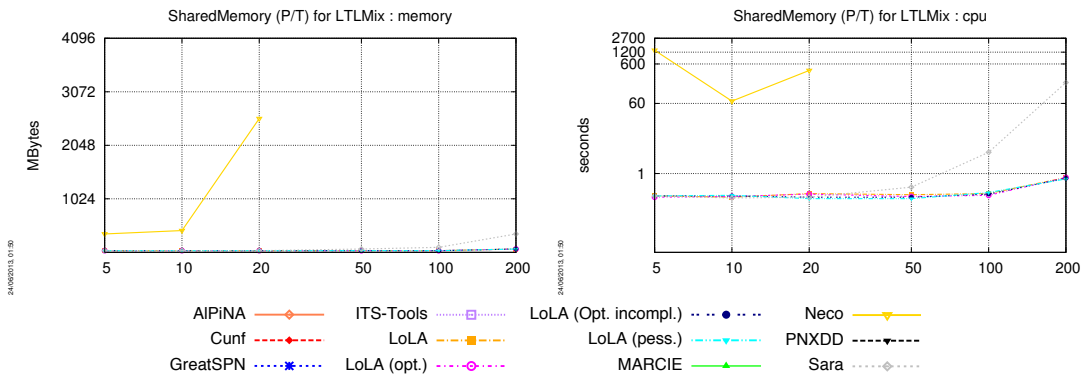


RwMutex (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



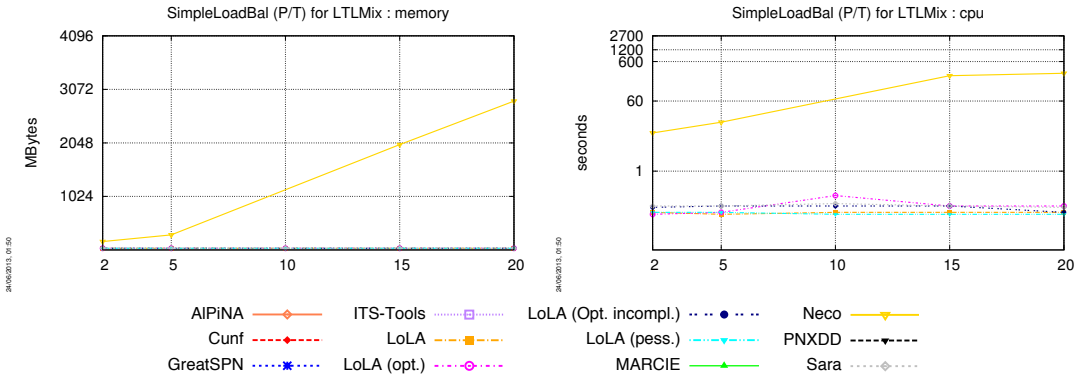
SharedMemory (colored) No instance of this model could be computed for the **LTLMix** examination.

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



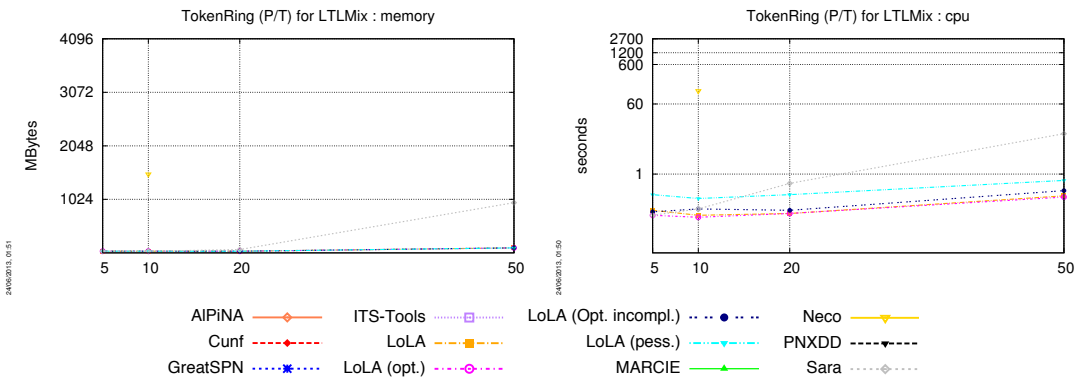
SimpleLoadBal (colored) No instance of this model could be computed for the **LTLMix** examination.

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

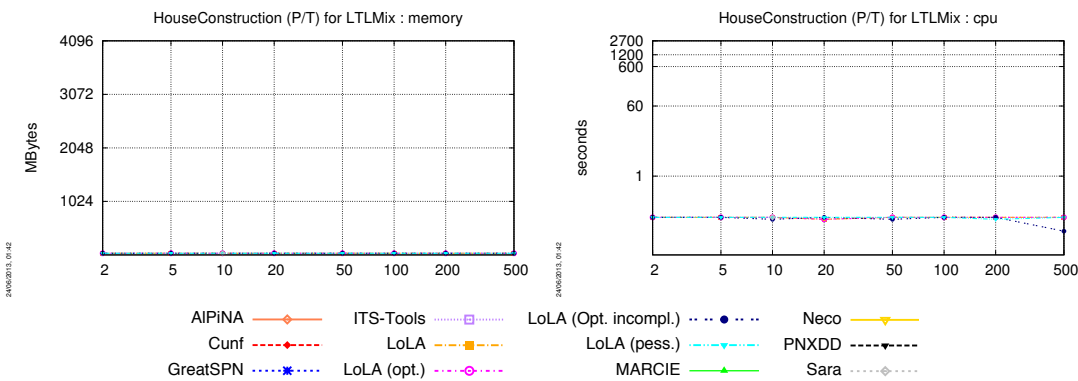


TokenRing (colored) No instance of this model could be computed for the **LTLMix** examination.

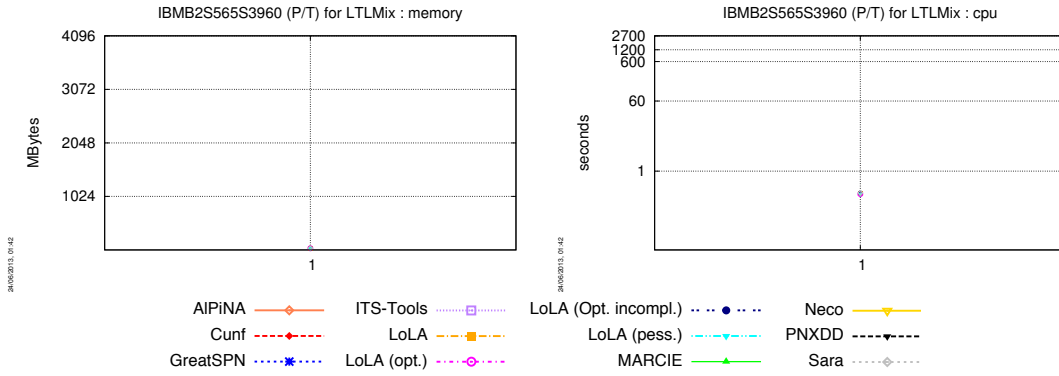
TokenRing (P/T) The charts below respectively show how tools compete with this “Known” model (memory and CPU).



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

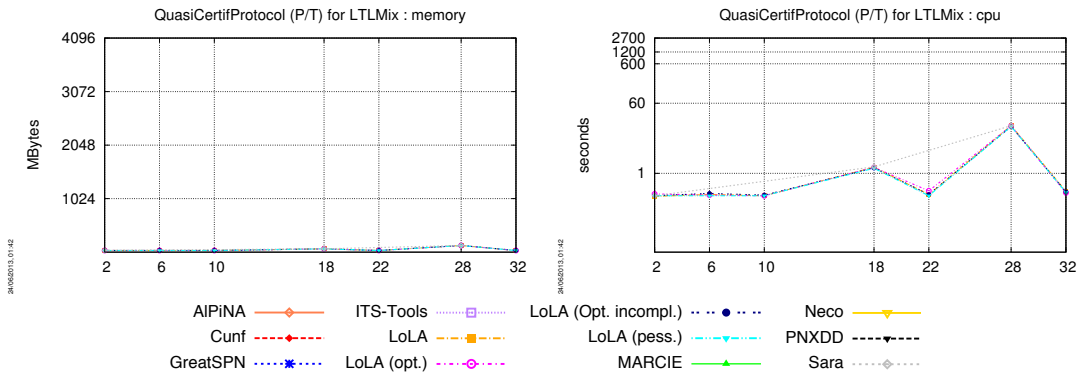


IBMB2S565S3960 (P/T) The charts below respectively show how tools compete with this “Suprise” model (memory and CPU).

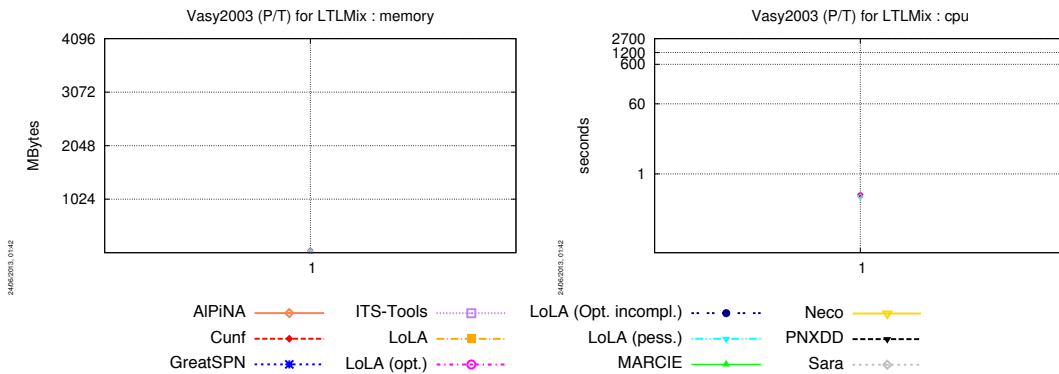


QuasiCertifProtocol (colored) No instance of this model could be computed for the **LTLMix** examination.

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 “Suprise” 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	FFFFFFF	cc
03	cc	cc			cc			cc	FFFFFFT	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	FFFFFFF	cc
015	cc	cc			cc			cc	FTTTTTT	cc
020	cc	cc			cc			cc	FFFFFFF	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	FTFTFFF	cc	
020	cc	cc			cc		cc	FTFTFFF	cc	
050	cc	cc			cc		cc	TTFTTFF	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	FTFTFFF	cc	
005	cc	cc			cc		cc	FTFTFFF	cc	
010	cc	cc			cc		cc	FFTTTFF	cc	
020	cc	cc			cc		cc	FFFFFFF	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	
GlobalResAlloc (colored)										
Instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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
GlobalResAlloc (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	TTTTFTT	cc	
0010	cc	cc			cc		cc	FFFTFFF	cc	
0020	cc	cc			cc		cc	FFFFFFF	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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
2	cc	cc			cc		cc	FFFFFFF	cc	
3	cc	cc			cc		cc	FFFFFFF	cc	
4	cc	cc			cc		cc	to	cc	
5	cc	cc			cc		cc	FFFFTTF	cc	
6	cc	cc			cc		cc	FTFTFFF	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		FFFFFFF	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		FFFFFFF	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		FFFTIFF	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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
000005	cc	cc			cc		cc	TTFTFFF	cc	cc
000010	cc	cc			cc		cc	FTFTFFF	cc	cc
000020	cc	cc			cc		cc	FFFFFFF	cc	cc
000050	cc	cc			cc		cc	cc	cc	cc
000100	cc	cc			cc		cc	cc	cc	cc
000200	cc	cc			cc		cc	cc	cc	cc
000500	cc	cc			cc		cc	cc	cc	cc
001000	cc	cc			cc		cc	cc	cc	cc
002000	cc	cc			cc		cc	cc	cc	cc
005000	to	to			to		to	cc	cc	to
010000	cc	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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
03	cc	cc			cc		cc	FTFTFFF	cc	cc
10	cc	cc			cc		cc	cc	cc	cc
20	cc	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	nf	nf
Railroad (P/T)										
Instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
005	cc	cc			cc		cc	FFFTFFF	cc	cc
010	cc	cc			cc		cc	FTFTFFF	cc	cc
020	cc	cc			cc		cc	FTFTFFF	cc	cc
050	cc	cc			cc		cc	cc	cc	cc
100	cc	cc			cc		cc	cc	cc	cc
ResAllocation (P/T)										
Instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
R002C002	cc	cc			cc		cc	FTTFFF	cc	cc
R003C002	cc	cc			cc		cc	FFFTFFF	cc	cc
R003C003	cc	cc			cc		cc	TTFTTT	cc	cc
R003C005	cc	cc			cc		cc	FFFFFFF	cc	cc
R003C010	cc	cc			cc		cc	FFFFFTF	cc	cc
R003C015	cc	cc			cc		cc	FTTFFF	cc	cc
R003C020	cc	cc			cc		cc	FFFFFFF	cc	cc
R003C050	cc	cc			cc		cc	FTFTFFF	cc	cc

R003C100	cc	cc		cc		cc	FFFFTFFF	cc		
R005C002	cc	cc		cc		cc	FTFTTFFF	cc		
R010C002	cc	cc		cc		cc	TTFTTFFF	cc		
R015C002	cc	cc		cc		cc	FTFTTFFF	cc		
R020C002	cc	cc		cc		cc	FTTTTFFF	cc		
R050C002	cc	cc		cc		cc	FTFTTFFF	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	FTFTTFFF	cc	cc
r0010w0020	cc	cc		cc			cc	FFFFTTTT	cc	cc
r0010w0050	cc	cc		cc			cc	FTFTTTTT	cc	cc
r0010w0100	cc	cc		cc			cc	FFFFTFFF	cc	cc
r0010w0500	cc	cc		cc			cc	cc	cc	cc
r0010w1000	cc	cc		cc			cc	cc	cc	cc
r0010w2000	cc	cc		cc			cc	cc	cc	cc
r0020w0010	cc	cc		cc			cc	TTTTTFFF	cc	cc
r0100w0010	cc	cc		cc			cc	FTTTTFFF	cc	cc
r0500w0010	cc	cc		cc			cc	cc	cc	cc
r1000w0010	cc	cc		cc			cc	cc	cc	cc
r2000w0010	cc	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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
000005	cc	cc		cc			cc	FFFFTFFF	cc	cc
000010	cc	cc		cc			cc	FFFFTFFF	cc	cc
000020	cc	cc		cc			cc	cc	cc	cc
000050	cc	cc		cc			cc	cc	cc	cc
000100	cc	cc		cc			cc	cc	cc	cc
000200	cc	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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
02	cc	cc		cc			cc	FFFFFFF	cc	cc
05	cc	cc		cc			cc	FTTTTFFF	cc	cc
10	cc	cc		cc			cc	to	cc	cc

15	cc	cc		cc		cc	FFFFFFF	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	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
005	cc	cc			cc		cc	to	cc	cc
010	cc	cc			cc		cc	cc	cc	cc
020	cc	cc			cc		cc	cc	cc	cc
050	cc	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	cc
005	cc	cc			cc		cc	cc	cc	cc
010	cc	cc			cc		cc	cc	cc	cc
020	cc	cc			cc		cc	cc	cc	cc
050	cc	cc			cc		cc	cc	cc	cc
100	cc	cc			cc		cc	cc	cc	cc
200	cc	cc			cc		cc	cc	cc	cc
500	cc	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	cc
QuasiCertifProtocol (colored)										
instances	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
02	cc	cc			cc		cc	cc	cc	cc
06	cc	cc			cc		cc	cc	cc	cc
10	cc	cc			cc		cc	cc	cc	cc
18	cc	cc			cc		cc	cc	cc	cc
22	cc	cc			cc		cc	cc	cc	cc
28	cc	cc			cc		cc	cc	cc	cc
32	cc	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	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	pass	Neco Sara
Total Score	0	0			0		0	106	0
CSRepetitions (Colored)									
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pass	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	pass	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	pass	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	pass	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	pass	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	pass	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	pass	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	0	0	0	
subtotal	0	0	0	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	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
NeoElection (P/T)									
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco Sara
1st instance	0	0	0	0	0	0	0	1	0
instances	0	0	0	0	0	0	0	1	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	2	0
subtotal	0	0	0	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	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
PermAdmissibility (P/T)									
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco 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
Peterson (Colored)									
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco 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
Peterson (P/T)									
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco Sara
1st instance	0	0	0	0	0	0	0	1	0
instances	0	0	0	0	0	0	0	1	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	2	0
subtotal	0	0	0	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	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)									
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco Sara
1st instance	0	0	0	0	0	0	0	1	0
instances	0	0	0	0	0	0	0	3	0
max reached	0	0	0	0	0	0	0	0	0
best	0	0	0	0	0	0	0	2	0
subtotal	0	0	0	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	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		
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	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	
SimpleLoadBal (P/T)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	Sara
1st instance	0	0		0			0	1	0	0
instances	0	0		0			0	3	0	0
max reached	0	0		0			0	0	0	0
best	0	0		0			0	2	0	0
subtotal	0	0		0			0	6	0	0
TokenRing (Colored)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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	Neco	Sara
Total Score	0	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	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
IBMB2S565S3960 (P/T)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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 (Colored)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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)										
	LoLA	LoLa	opt	LoLa	opt	inc	LoLa	pess	Neco	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

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

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