Gurobi 9.5 Performance Benchmarks

GUROBI
OPTIMIZATION

The World's Fastest Solver

Thank You for Your Interest in Gurobi

GUROBI OPTIMIZATION

The Gurobi Optimizer was designed from the ground up to be the fastest, most powerful solver available for your MIP (MILP, MIQP, and MIQCP), LP, QP and QCP problems.

- **In industry standard public benchmark tests Gurobi has the…**
  - Fastest overall solve times for MIP models
  - Fastest overall solve times for LP models
  - Fastest overall solve times for QP models
  - Fastest overall solve times for QCP models

And, as problems get harder, our relative performance gets even better.

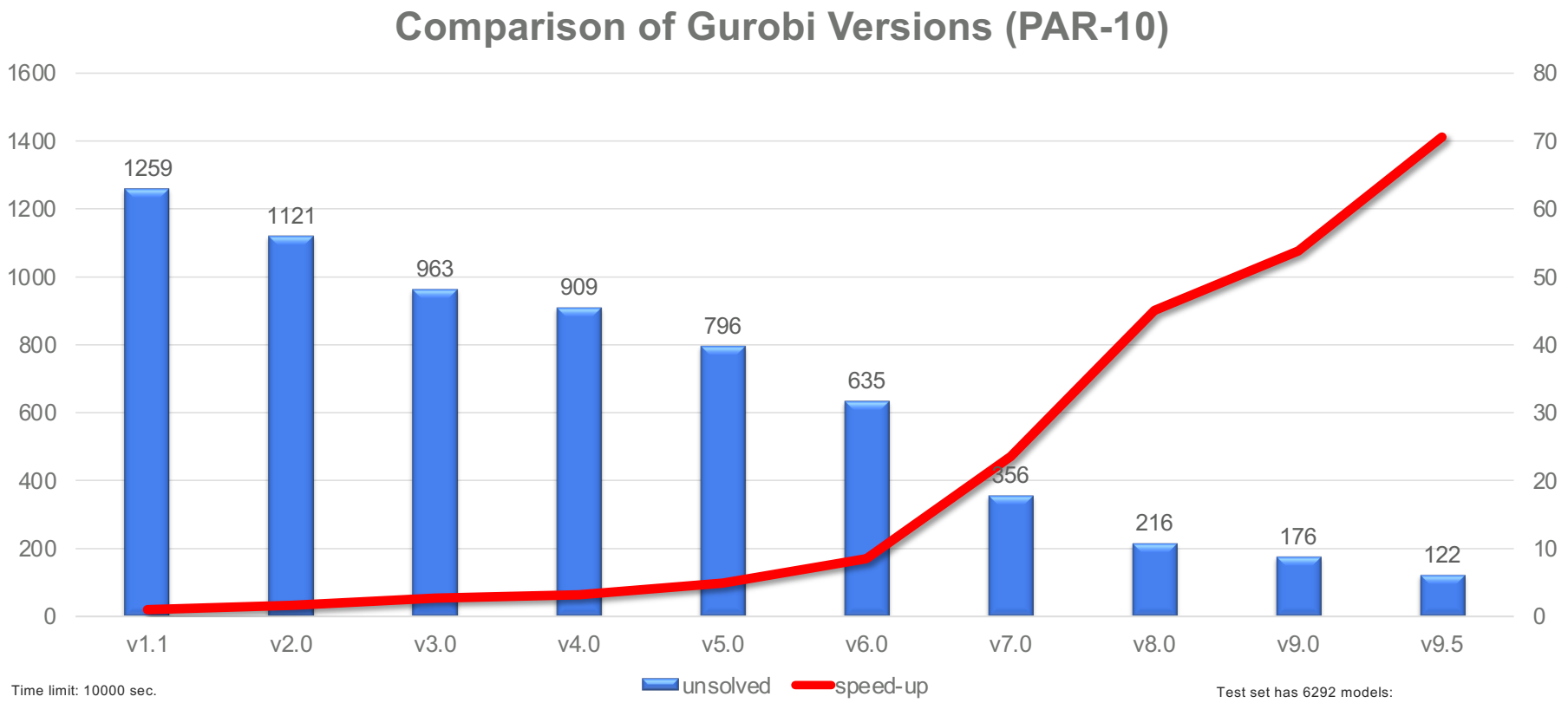
Benchmark Testing

- **Primary Objectives**
  - Robustness testing
  - Compare version-to-version improvements

- **Test Bank**
  - Internal library of over 10,000 models from industry and academia

On the next slides we'll share some specific results from our own internal testing. Of course, every model is different, so we invite you to **try Gurobi for yourself** or **contact us** with any questions.

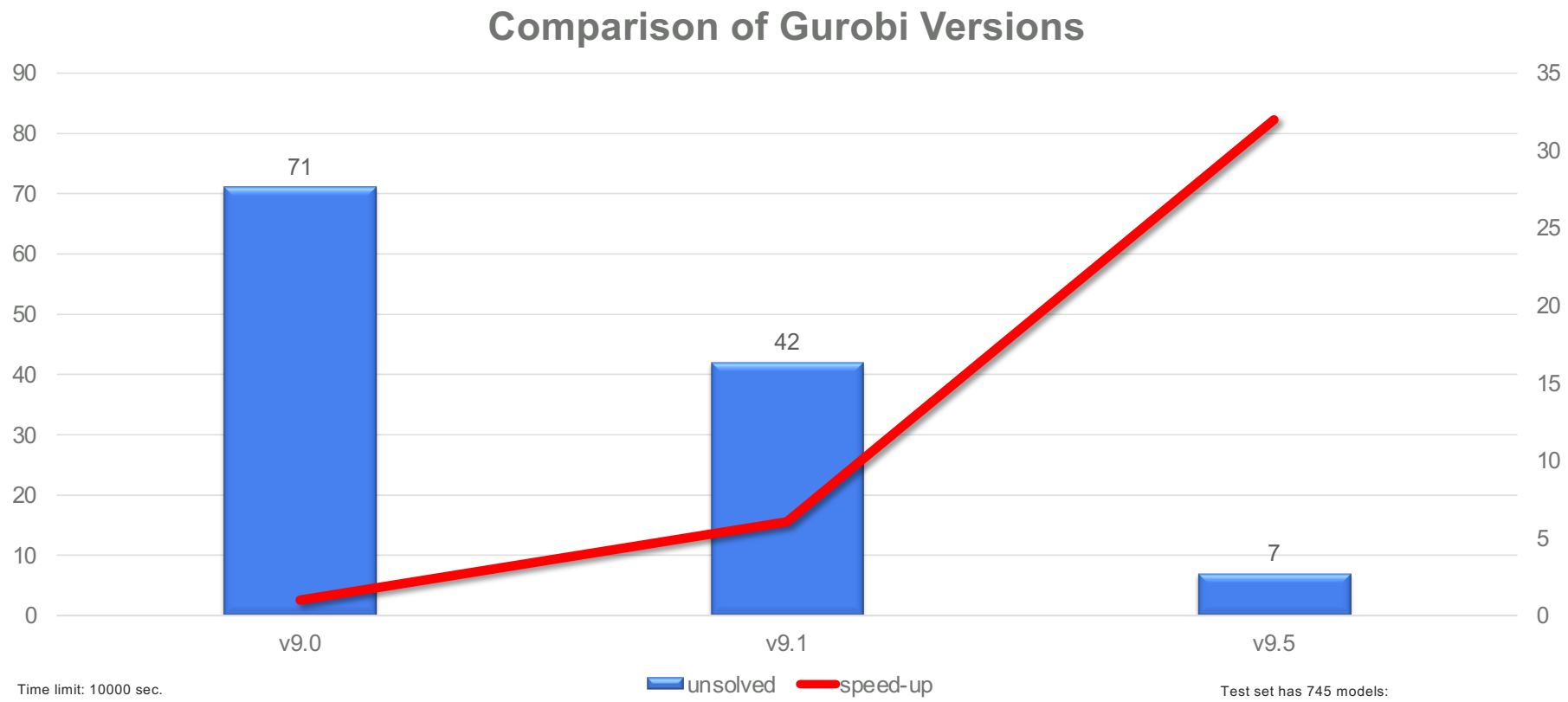
Gurobi Keeps Getting Better



Time limit: 10000 sec.
Intel Xeon CPU E3-1240 v5 @ 3.50GHz
4 cores, 8 hyper-threads
32 GB RAM

Test set has 6292 models:
- 561 discarded due to inconsistent answers
- 1581 discarded that none of the versions can solve
- speed-up measured on >100s bracket: 2343 models

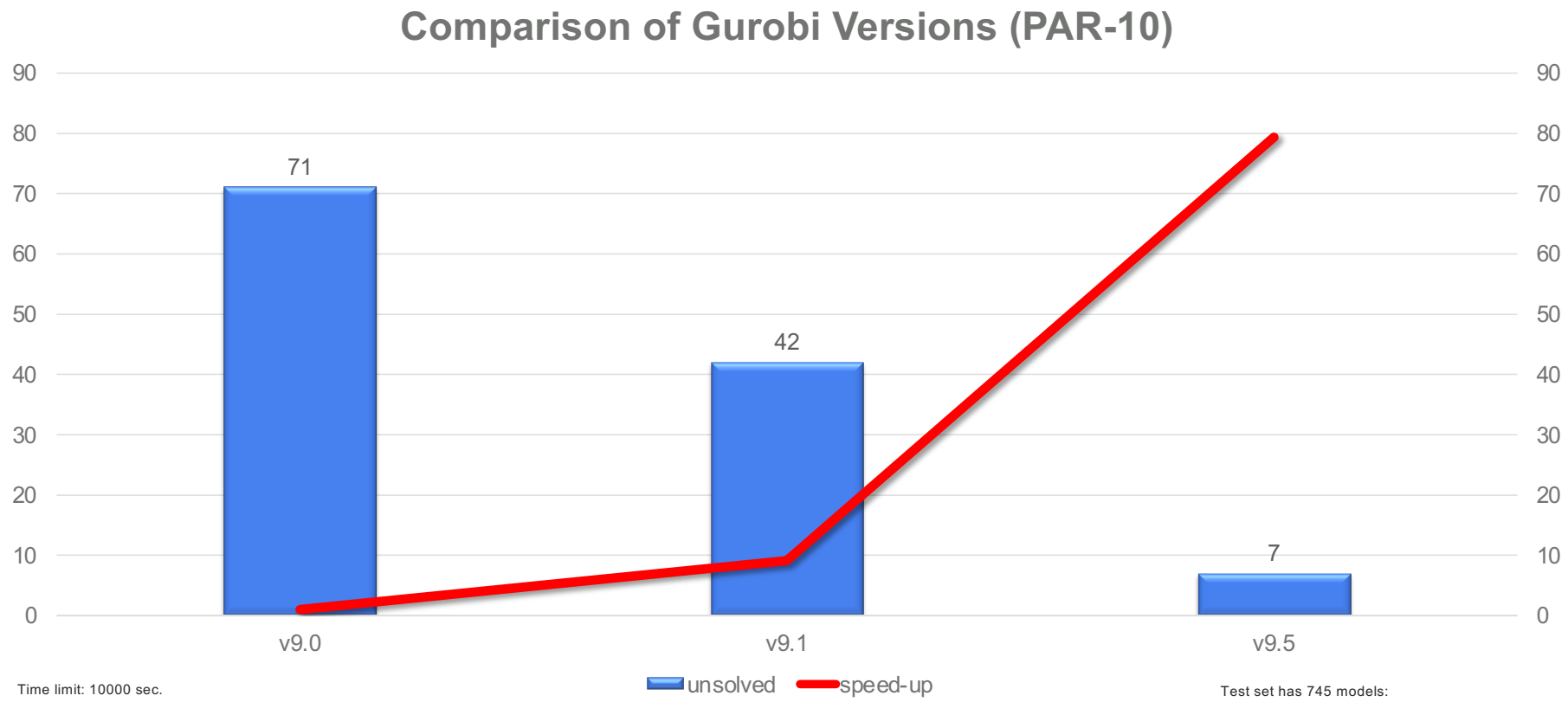
Gurobi Keeps Getting Better: Non-Convex MIQCP



Time limit: 10000 sec.
Intel Xeon CPU E3-1240 v5 @ 3.50GHz
4 cores, 8 hyper-threads
32 GB RAM

Test set has 745 models:
- 12 discarded due to inconsistent answers
- 282 discarded that none of the versions can solve
- speed-up measured on >100s bracket: 162 models

Gurobi Keeps Getting Better: Non-Convex MIQCP



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Faster Than Ever

GUROBI OPTIMIZATION

Compared to the Gurobi 9.1. release, Gurobi 9.5 has boosted its speeds across the board.

	PROBLEM TYPES	OVERALL SPEED-UP (>1s)	HARD MODELS (>100s)
LP	• Concurrent • Primal Simplex • Dual Simplex • Barrier	• 14% • 23% • 20% • 18%	• 54% • 43% • 43% • 56%
MIP	• MIP • Convex MIQP • Convex MIQCP • Non-Convex MIQCP	• 15% • 30% • 33% • 3.0x	• 27% • 68% • 78% • 7.5x

Isn't it time you considered upgrading to Gurobi?

- You can get a free academic license at www.gurobi.com/academia
- You can request a free commercial evaluation license by contacting us at: info@gurobi.com.
- We are happy to help you benchmark your models with Gurobi v9.0. Please submit a Gurobi support ticket to get started.