



Gurobi Days

Duke Perrucci
Chief Operating Officer

October 19, 2022



An aerial night view of Paris, France, with the Eiffel Tower prominently featured on the right side. The city lights are visible, and the sky is dark. The text 'GUROBI' is overlaid in red on the left side of the image.

GUROBI

WORLD'S MOST
POWERFUL SOLVER

Our Vision

A world where any organization can fearlessly use mathematical optimization technology to manage complexity and make better decisions

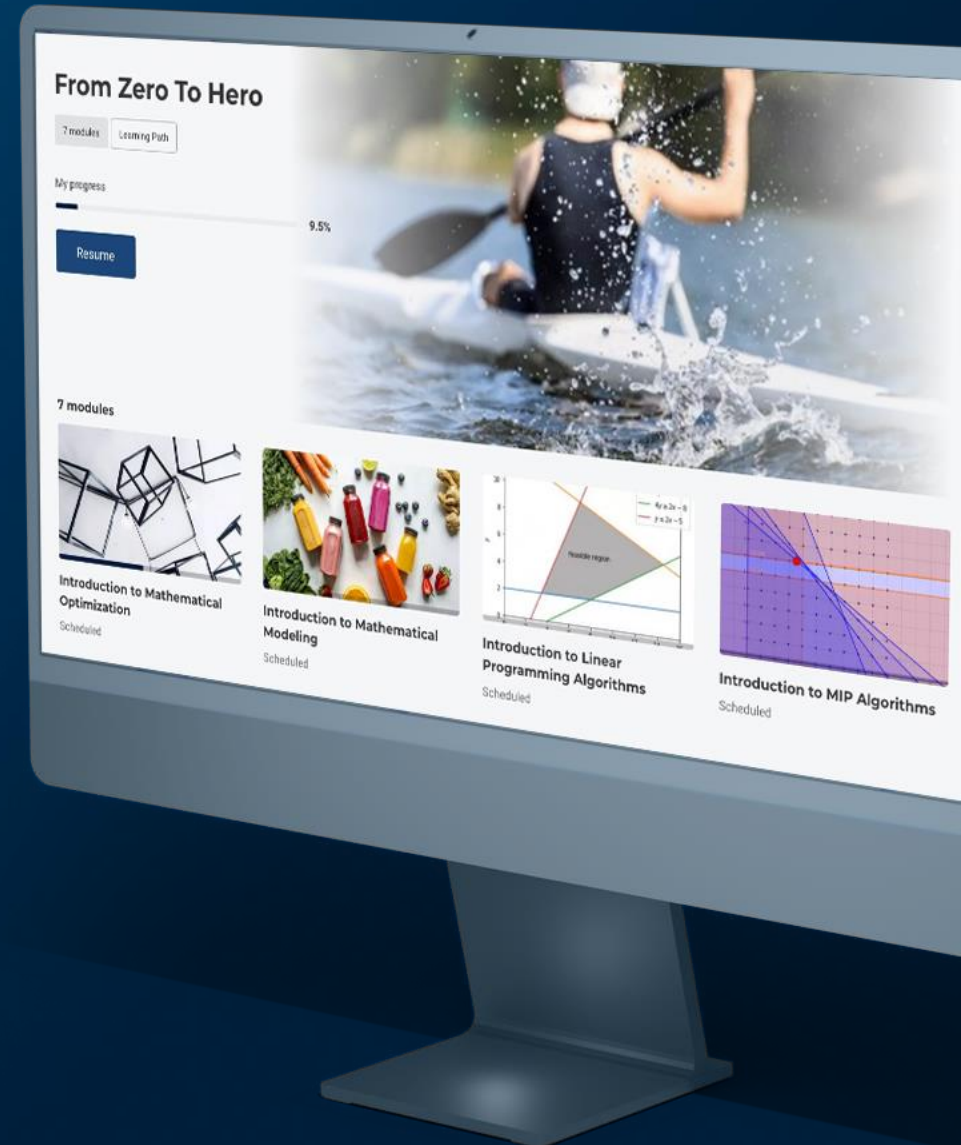




GUROBI
ACADEMY

Introducing Digital Learning

Online, self-paced courses for all skill levels



Bespoke training by the experts at Gurobi

Helping you get the most out of Gurobi

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Without NoRel
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GUROBI OPTIMIZATION
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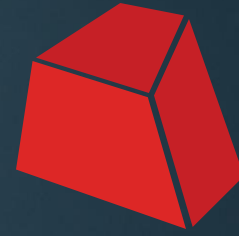
```
Gurobi Optimizer version 9.5.0 build v9.5.202 (64bit)
Copyright (c) 2022, Gurobi Optimization, LLC

Read MPS format model from file glassc.mps
Reading time = 0.01 seconds
Class: 396 rows, 322 columns, 1805 nonzeros
Thread count: 8 physical cores, 8 logical processors, using up to 8 threads
Optimize a model with 396 rows, 322 columns and 1805 nonzeros
Model fingerprint: 4e38034f4f
Variable types: 38 continuous, 180 integer (0 binary)
Coefficient statistics:
  Matrix range [1e+00, 8e+00]
  Objective range [1e+00, 1e+01]
  Bounds range [1e+00, 8e+01]
  RHS range [1e+00, 8e+01]
Presolve removed 0 rows and 0 columns
Presolve time: 0.00s
Presolved: 396 rows, 322 columns, 1805 nonzeros
Variable types: 38 continuous, 180 integer (0 binary)
Found heuristic solution: objective 5.13330e+00

Best objective: objective 5.00000e+00, 73 iterations, 0.00 seconds (0.00 work units)
```

| Nodes | Current Node | Objective Bounds | Work | | | | | | |
|--------------|--------------|------------------|---------|-------|------------|------------|-------|---|----|
| Used Unexpl. | Obj | Depth | Unexpl. | Basic | Unpl. | IL/Node | Time | | |
| 0 | 0 | 5.0000e+00 | 0 | 73 | 5.1333e+00 | 5.0000e+00 | 74.0% | - | 0s |
| 1 | 1 | 5.0000e+00 | 1 | 2 | 2.0000e+00 | 5.0000e+00 | 65.0% | - | 0s |
| 2 | 2 | 5.0000e+00 | 2 | 2 | 2.0000e+00 | 5.0000e+00 | 68.0% | - | 0s |
| 3 | 3 | 5.0000e+00 | 3 | 72 | 2.0000e+00 | 5.0000e+00 | 68.0% | - | 0s |
| 4 | 4 | 5.0000e+00 | 4 | 72 | 2.0000e+00 | 5.0000e+00 | 68.0% | - | 0s |
| 5 | 5 | 5.0000e+00 | 5 | 74 | 2.0000e+00 | 5.0000e+00 | 68.0% | - | 0s |
| 6 | 6 | 5.0000e+00 | 6 | 74 | 2.0000e+00 | 5.0000e+00 | 68.0% | - | 0s |
| 7 | 7 | 5.0000e+00 | 7 | 1 | 1.0000e+00 | 5.0000e+00 | 67.0% | - | 0s |





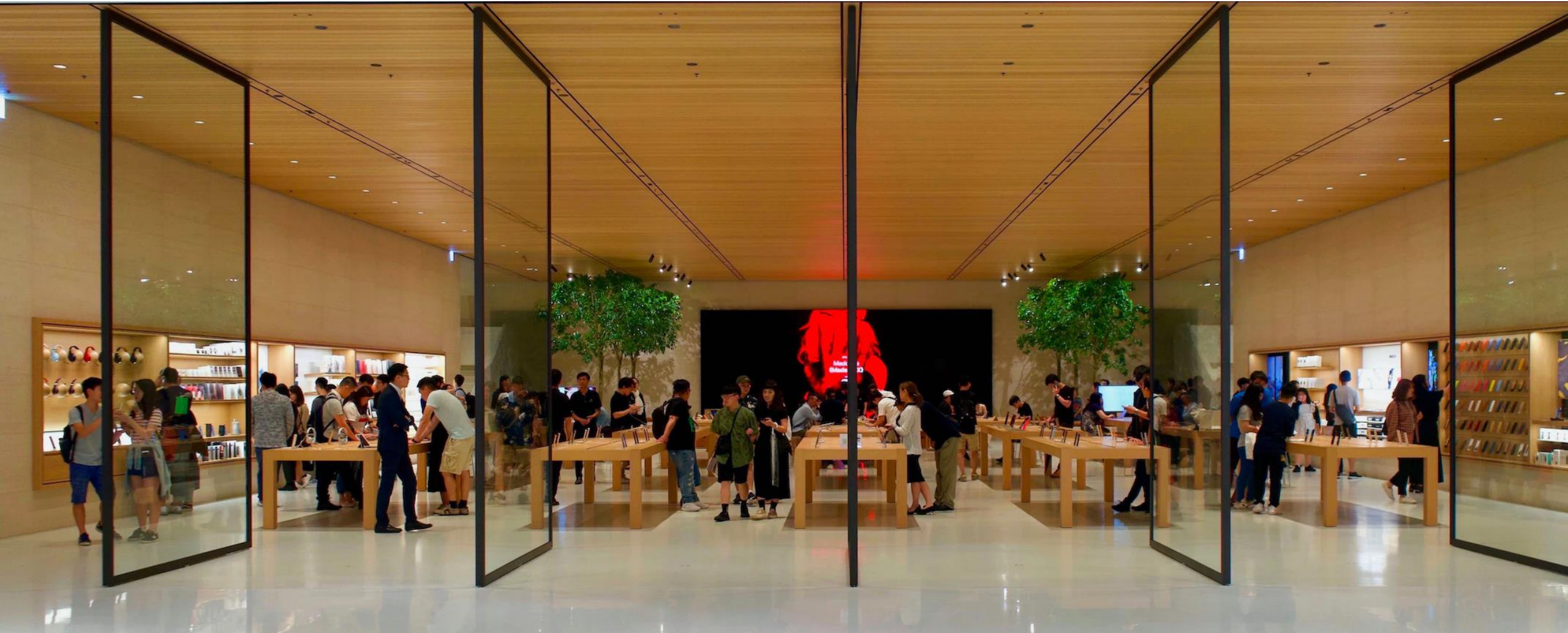
GUROBI
ALLIANCE

End-to-end services, delivered by our trusted partners

External domain expertise to help drive projects forward

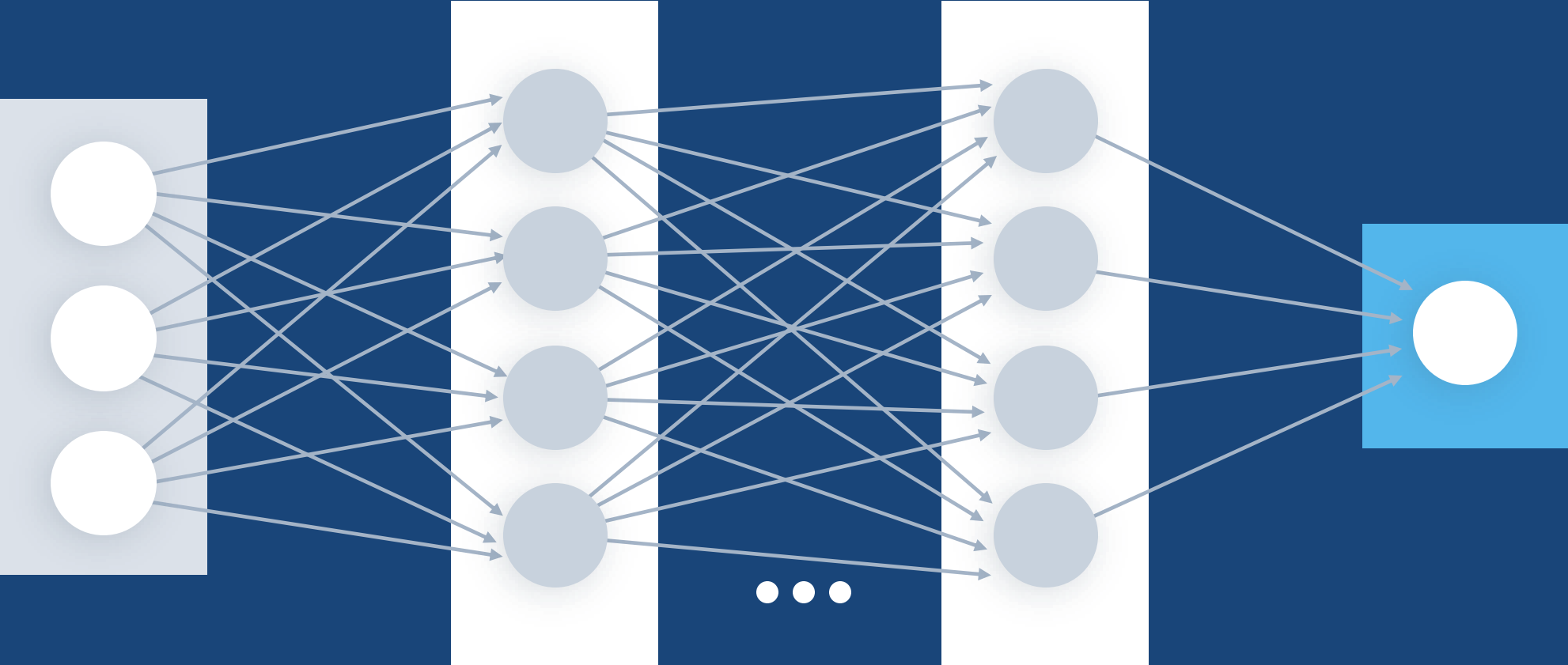
The Gurobi Model Store

Pre-built models to reduce barriers to Optimization



Data Science Tools

Features that allow Gurobi to fit better into a data scientist's typical work environment



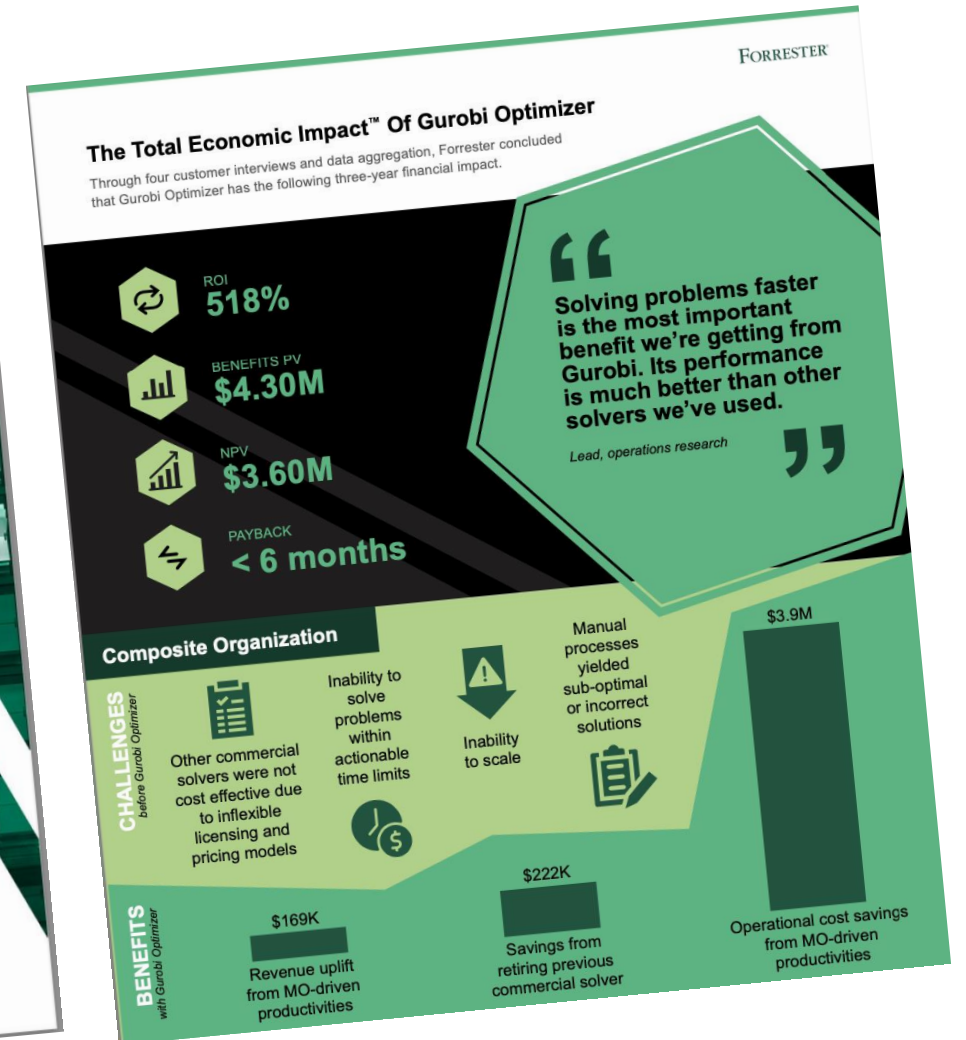
Academic Engagement

Learning tools for academia to expand understanding



Building the case for Optimization

Creating trainings and content to help practitioners 'sell' optimization internally





GUROBI DAYS PARIS



A hand holding a glowing lightbulb with a network of white lines and dots radiating from it against a black background. The lightbulb is the central focus, emitting a warm, yellow glow. From the top of the bulb, a complex network of white lines and dots extends upwards and outwards, resembling a neural network or a data visualization. The background is a solid black, which makes the white lines and the glowing bulb stand out prominently.

The next 2 days



Advance your skills while learning new ones

Root relaxation: objective 1.975667e+05, 5 iterations, 0.00 seconds (0.00 work units)

| Nodes | | Current Node | | | Objective Bounds | | | Work | |
|---|--------|--------------|-------|--------|------------------|------------|-------|---------|------|
| Expl | Unexpl | Obj | Depth | IntInf | Incumbent | BestBd | Gap | It/Node | Time |
| 0 | 0 | 197566.667 | 0 | 2 | 207700.000 | 197566.667 | 4.88% | - | 0s |
| 0 | 0 | 207435.294 | 0 | 4 | 207700.000 | 207435.294 | 0.13% | - | 0s |
| Scenario 3 has been solved. 5/7 scenarios left. | | | | | | | | | |
| Scenario 5 has been solved. 4/7 scenarios left. | | | | | | | | | |
| Scenario 6 has been solved. 3/7 scenarios left. | | | | | | | | | |
| 0 | 0 | - | 0 | | 207700.000 | 207700.000 | 0.00% | - | 0s |

Optimal solution found at node 0 - now completing multiple scenarios...
Scenario 0 has been solved. 2/7 scenarios left.

| Nodes | | Current Node | | | Scenario Obj. Bounds | | | Work | |
|-------|--------|--------------|-------|--------|----------------------|------------|-------|---------|------|
| Expl | Unexpl | Obj | Depth | IntInf | Worst Incumbent | BestBd | Gap | It/Node | Time |
| 0 | 0 | - | 0 | | 229540.000 | 210500.000 | 8.29% | - | 0s |
| 0 | 0 | - | 0 | | 229540.000 | 210500.000 | 8.29% | - | 0s |
| 0 | 2 | 226283.182 | 0 | 4 | 229540.000 | 226283.182 | 1.42% | - | 0s |

Scenario 4 has been solved. 1/7 scenarios left.
Scenario 1 has been solved. 0/7 scenarios left.

Cutting planes:

Gomory: 3

MIR: 1

Flow cover: 1

Explored 3 nodes (19 simplex iterations) in 0.01 seconds (0.00 work units)

Learn how to get
the most out of the
Gurobi Optimizer

AIRFRANCE 

 **BlaBlaCar**

 **DecisionBrain**TM
Smarter Decisions. Better Results.

Learn about
interesting
use cases and
best practices

DECISION LAB 

MARS WRIGLEY



CEZ GROUP



Get to know others
in the field

We recommend that you:

1. Stretch out of your comfort zone
2. Ask questions
3. Expand your professional network
4. Have some fun



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Gurobi Days Paris Team



TAM - Speaker
Kostja Siefen

Head of Global Technical Account Management



TAM - Speaker
Jennifer Locke

Technical Account Manager



Support - Speaker
Marika Karbstein

Optimization Engineer



Support - Speaker
David Torres Sanchez

Optimization Engineer



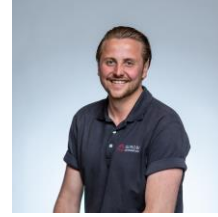
Dev - Speaker
Roland Wunderling

Senior Developer



Dev - Speaker
Robert Luce

Senior Developer



Sales - Speaker
Jan Schwarzkopf

Ecosystem Account Manager



Sales - Speaker
Sascha Haake

Director of Sales - EMEA



Dev
Xavier Nodet

Development Manager



Sales
Milos Pavlovic

Account Director



Sales
Danielle Parry

Account Director



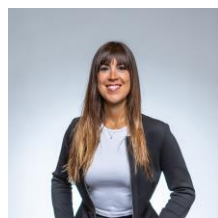
Sales
Peter Matthesius

Account Director Germany



Mktg
Pamela Trevino

EMEA Marketing Manager



Mktg
Paloma Lucas Jambrina

Partner Ecosystem Program Manager



Mktg
Vanessa Schmidt

Field Marketing Manager



Exec
Duke Perrucci

Chief Operating Officer



Sales
Frederic Baumann

Account Director



Sales
Frank Häger

Account Director