

WHITE PAPER

Migrating to Gurobi

A solver-agnostic migration brief.

Migration is usually simpler than teams expect

Many teams assume that switching optimization solvers requires a major rewrite of their optimization system. In practice, most organizations migrate to Gurobi with minimal disruption because the solver sits within an existing decision pipeline—it doesn't redefine it.

Migration effort depends primarily on how models are currently implemented, not on the size or complexity of the optimization models themselves. This guide offers a concise overview of the key steps involved in the migration process and outlines how Gurobi's expert support team and technical resources can help make the shift easier.

Bottom line up front

Start by replacing the solver at the narrowest point in the stack. Confirm that business outputs remain on track (ideally improving), and then refactor only the interfaces, parameters, or deployment choices that add long-term value.



Typical migration path

A practical migration usually follows six steps:

01

Map solver touchpoints

TYPICAL MOVE:

Identify where the solver shows up today: modeling layer, files, APIs, callbacks, deployment, and support tooling.

02

Freeze an acceptance set

TYPICAL MOVE:

Keep source data, expected statuses, known edge cases, and business-output checks together, so the migration has a stable definition of success.

03

Swap the solver at the narrowest interface

TYPICAL MOVE:

Keep model-building code and downstream consumers stable wherever possible during the first cut.

04

Validate business parity and operational fit

TYPICAL MOVE:

Confirm feasibility, objective outcomes, key outputs, and workflow behavior before broad refactoring.

05

Refactor only where it pays off

TYPICAL MOVE:

Move to a native Gurobi API or use Gurobi-specific features only where they improve control, maintainability, or growth.

06

Cut over gradually

TYPICAL MOVE:

Use staged rollout, rollback criteria, and monitoring until Gurobi is the default with confidence.





What *doesn't* change

When migrating to Gurobi, your business problem does not change—unless you want it to change. Some customers switch to Gurobi because it enables them to expand their modeling fidelity or scope. Others just want faster performance on their existing models.

Data sources

Your data ingestion pipeline and sources remain the same. No need to rearchitect your ETL process.

Decision variables

The same real-world choices are being represented, with the same indexing, units, and business meaning.

Objective function

The goal remains the same, whether you're optimizing for cost, profit, service, or risk.

Core constraints

Your business rules and mathematical logic still define what is feasible.

Business outputs and KPIs

The same downstream checks and business measures should remain your yardstick before and after the switch.

Because Gurobi is extremely powerful and fast, you can expand your model over time to incorporate more business rules—but that is a follow-on improvement, not a migration prerequisite. These changes are typically isolated to the optimization layer, though they can go extend to other areas of the application if your new capabilities allow you to make broader decisions.

What might change

Integration layer

API names, modeling syntax, or the adapter used to call the solver may change.

TIMELINE: If using AMPL, GAMS, Pyomo: hours to minutes. If using a solver-specific language: days to single-digit weeks.

Parameters and solver behavior

Translate the intent of settings rather than assuming one-to-one copies across solvers. Be sure to reach out to the Gurobi Experts for tuning help.

TIMELINE: Hours to single-digit days (much of which can be spent by the Experts, not you).



Deployment and licensing

Installation pattern, license model, or solve-service architecture will likely change (for the better—Gurobi does not perform license audits, like some other solvers do).

TIMELINE: Variable, depending on how much you want to change. Days to weeks, possibly single-digit months if large re-architecting is desired.

Vendor-specific features

Callbacks, warm starts, or other solver-exclusive constructs may need refactoring. Constraint programming models will need to be refactored as MIPs, or handled using a CP solver like OR-Tools (with CP-SAT solver).

TIMELINE: Days to weeks, depending on how many solver-exclusive constructs you use (and if you use them via AMPL, GAMS, or Pyomo) or a solver-specific language.

Model enhancements

Once the switch is stable, you may choose to widen model scope or use Gurobi-native features where they help the business.

TIMELINE: Totally voluntary, but can take weeks to months based depending on scope.

SOLVER-AGNOSTIC TAKEAWAY

This pattern applies whether the current engine is CPLEX, Xpress, HiGHS, or an in-house solver, or heuristics: preserve the business model, isolate the solver boundary, and widen the rewrite only where the business case is clear.



How to get support from Gurobi

The team at Gurobi can accelerate migration and improve steady-state use.

Planning the migration

WHO: **Technical Account Manager (TAM), Experts**

Migration sequencing, deployment fit, licensing options, and choosing the right implementation path.

Setup and day-to-day questions

WHO: **Gurobot and Gurobi Help Center**

Installation, licensing, API usage, troubleshooting, and quick answers.

Porting questions or difficult model behavior

WHO: **Gurobi Experts**

Interface guidance, logs, parameters, basic formulation questions, and solver behavior.

Broader implementation needs

WHO: **Alliance Partners**

Additional delivery capacity for porting, integration, rollout, or application changes.

To help us help you, try to package a small reproducible example and include your current interface or API, Gurobi version, deployment context, any logs or error messages, and the business outcome you want to preserve or improve.



Ready to start
your migration?

Talk to the
Gurobi team!

Experience the power of Gurobi for yourself

Try Gurobi free for 30 days, including:

- ✓ Free benchmarking services
- ✓ Free model tuning services
- ✓ Free access to our world-class technical guidance and support



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