

Article

[alex kosinets](#) · Dec 9, 2021 2m read

## MULTIEXCEL

Millions of professionals use a wonderful tool, spreadsheets, for engineering calculations and financial analysis. It attracts a user-friendly interface and clear data organization. Cell formulas provide rich opportunities for automating calculations. No programming is required. (For example, Microsoft Excel)

But in order to expand the scope of the tool, it is necessary to increase the dimension of the tables and the speed of calculations. It is necessary to create a single, common database for a group of users. Cell formulas should be able to do everything. In this case, it is advisable not to change the source code of the application. It seems like an impossible mission.

However, M-technology has led to an unusual solution: the “ spreadsheet m-amplifier ” . An analogy is your car: the hydraulic booster helps even a fragile woman to turn the steering wheel easily. In the old days, only a strong macho could drive a car. Another example is a quantum computer. The calculations are carried out in parallel and consistently in all Universes of our Multiverse. The solution to any task is instant. So far, only in a project.

Our m-amplifier ( “ Shadow excel ” ) is implemented as parallel invisible spreadsheets inside Cache / IRIS InterSystems. There are also workbooks, worksheets, columns, rows, cells with formulas. Each main-excel sheet has a corresponding shadow-m-sheet. Each cell has a shadow cell. But formulas in the shadow cells are unusual - they are actually MUMPS commands. The m-worksheets are not two-dimensional, but multi-dimensional. The interface with users is not directly, but through “ main excel ” .

The possibilities of the shadow are orders of magnitude higher. Therefore, shadow does all the hard work and is much more efficient. M-globals spin faster than main sheets. All Cache / IRIS resources are available to M-formulas. You can build complex multidimensional data structures and quickly receive analytical reports with a large number of graphic elements. You can create a complex interactive game.

There is no need to keep a huge archive of workbooks with data from different periods of time. All data is stored in M-database.

"Shadow excel" is associated with several users at the same time over a network or Internet. Users see “ main excel ” on their screens, which is fantastically fast and performs incredibly difficult tasks.

We managed to correctly organize reliable synchronous work of shadow and main excel in real time. Everything that happens in the shadow is transferred to the main one and vice versa. They work as a single tool: MULTIEXCEL, on which it is now possible to build large complex systems of production and financial accounting and management. It is also used as UI for Cache / IRIS.

The operating experience of MULTIEXCEL has shown excellent results. This is another interesting area of application for M-technologies.

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