

ABSTRACT:

**THE POWER OF A SUPERCOMPUTER WITHOUT A
SUPERCOMPUTER
– PROJECT BINSYS –**

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There are countless domains of the scientific world requiring the processing of enormous amounts of data. At this point emerges the idea in most scientists: how handy would the power of a supercomputer be. However, in most cases the idea encounters financial barriers. Our presentation would like to introduce how the Eötvös Lóránd Science University and the Hungarian Academy of Sciences cooperated, as a result of which we achieved significant computing power via the connection of desktop computers. The aim of the project is to find most of the generalized binary number systems (all of them up to a certain dimension). The difficulty is that the size of this finite set is an exponential function of the dimension. The project currently processes the 11. dimension. Although at the beginning of the project the final aim was to process the number scope up to the 11. dimension, with the newly gained processing power it is likely that the upper borders of the project will be extended. The presentation meets the computer science background of the project and shortly introduces the interpretation of the results. The computing background is provided by the Laboratory of Parallel and Distributed Systems at the Computer and Automation Research Institute of the Hungarian Academy of Sciences with the BOINC (Berkeley Open Infrastructure for Network Computing) based Desktopgrid, the capabilities of which is also about to be introduced during the presentation.