

World Community Grid

Accelerating research, tackling global issues

Overview

The Need

Vital humanitarian research is not being undertaken due to lack of access to essential computational power.

The Solution

World Community Grid harvests the unused computing capacity of volunteer PCs around the world, creating a secure virtual supercomputer available at no charge to scientists engaged in not-for-profit humanitarian research.

What Makes it Smarter

Pioneering scientific research into disease, climate change, hunger and social science is made possible and accelerated by removing constraints of access and affordability.

The Result

To date, 300,000 years of computer run-time which has processed over 350 million results for scientists free of charge.

For decades, scientists have conducted laborious trial and error research to address humanitarian issues such as virulent disease, hunger and the impacts of climate change. New approaches, which can dramatically accelerate this research, rely on modelling complex interactions or finding patterns in large sets of data or images but have largely gone untried due to the lack of affordable supercomputing capacity.

World Community Grid helps address this constraint by harvesting the unused capacity of PCs volunteered by organisations and individuals around the world, making it available without charge to scientists engaged in not-for-profit, humanitarian research. IBM created and operates World Community Grid as a philanthropic programme, using IBM technology and expertise to address several challenges.

- Security – the data, connected devices and systems of volunteers and organisations need strong security, as do IBM's servers and networks.
- User loyalty – contributing to World Community Grid is not the primary purpose of volunteers' PCs, so participation must be easy and unobtrusive to gain and maintain support.
- Serving research partners – World Community Grid must be easy for research partners too, providing high quality results that allow them to focus on science and not technology.

World Community Grid also needs global scale to harvest sufficient computing capacity, must avoid consuming significant additional energy, and has to operate within a budget consistent with a philanthropic investment.

Very secure, high-volume virtual computing

The stability and performance of IBM software and servers hosted at an IBM high availability facility – together with IBM expertise in virtual computing, security, data management and scientific research – enables a team of just seven people to manage this complex virtual environment.

Recent innovations include piloting the contribution of spare capacity from IBM's internal cloud. IBM plans to offer this service to those clients of IBM cloud computing services who want to contribute to humanitarian research.



