world community grid

technology solving problems

Request for Proposal (RFP)

Purpose

World Community Grid is seeking proposals from research organizations interested in harnessing the immense power of Internet-connected computers to accelerate humanitarian research. Our goal is to support innovative efforts that will benefit most from this technology and promise to deliver significant results on the most pressing issues facing the global community. To meet this goal, World Community Grid plans to implement as many as five research projects per year.

Background

Grid technology joins together many individual computers, creating a large system with massive computational power that exceeds the power of a few supercomputers. This capability can be applied, on a global scale, to very large and complex problems for the benefit of humanity.

In 2003, the IBM Corporation was one of the sponsors of a smallpox study that took advantage of grid computing. This study, using today's largest available supercomputers, would have taken years to complete. With grid computing, this study was completed in less than six months and identified 45 potential smallpox-treatment candidates.

World Community Grid: A Philanthropic Initiative

As a result of the smallpox study success, IBM sought partners to create World Community Grid as a wholly philanthropic initiative, with the vision that it would be the world's largest public computing grid tackling projects for the benefit of humanity. The name was chosen carefully to represent the endeavor's reach (worldwide), its volunteer and scientific collaboration (community), and its technical underpinnings (grid computing).

With technology and funding provided by the IBM Corporation, World Community Grid is making grid technology available to public and not-for-profit organizations to use in humanitarian research that might otherwise not be completed due to the high cost of the computer infrastructure required in the absence of a public grid.

World Community Grid is designed as a resource for research done with a philanthropic or humanitarian purpose and will only be available to projects conducted for public and not-for-profit purposes. It will serve as a useful tool for the completion of a certain stage of research, hastening the progress of projects into further phases of development. Results must be made available to the global research community by the sponsoring research organization and remain in the public domain.

Because projects must serve to promote human welfare directly or indirectly, it is anticipated that projects in the following disciplines will be run on World Community Grid:

- **New and existing infectious disease research:** Research on cures for HIV and AIDS, Severe Acute Respiratory Syndrome (SARS), malaria, and others.
- **Genomic and disease research:** Studies that seek to identify the functions of the proteins that are coded by human genes and how they might relate to cures for common diseases.
- **Natural disasters and hunger:** Earthquake predictions, information on improving crop yields and livestock production, and evaluation of the supply of critical natural resources such as water.
- **Environmental Research:** Meteorology and severe weather prediction, pollution remediation, climate modeling, and others.

Research that has the potential to assist economically disadvantaged communities and those in developing countries or to provide the initial research that can open new fields of inquiry will have priority.

Technical Requirements

Projects must meet three basic technological requirements, to ensure benefits from grid computing:

1. Projects should have a need for millions of CPU hours of computation to proceed. However, humanitarian projects with smaller CPU hour requirements are able to apply.
2. The computer software algorithms required to accomplish the computations should be such that they can be subdivided into many smaller independent computations.
3. If very large amounts of data are required, there should also be a way to partition the data into sufficiently small units corresponding to the computations.

Ideally, existing application software would meet the above requirements. However, if existing software does not already meet the required characteristics, there may be technical modifications or alternatives that could satisfy the requirements. In order to meet the goal of opening new areas of inquiry, World Community Grid will seek at least one project each year that has a viable research proposal yet requires technical support to develop application software. The assessment of the project usually will require technical discussions with World Community Grid's technical teams to explore the possibilities and effort required to adapt the project's computational tasks to best exploit the grid. This will ultimately be a factor in deciding whether to proceed with a particular project.

Selection Criteria

Projects must meet the following Selection Criteria:

1. Project has specifically stated goals and anticipated results and explains how the work will significantly contribute to the eradication of human suffering or benefit humanity. World Community Grid welcomes projects that demonstrate the potential to assist economically disadvantaged communities and developing countries, or to provide the initial research that can open new fields of inquiry that benefit humanity.

2. Project meets grid computing technical requirements and is grid-enabled. The project shows evidence that the project results will be accelerated by the use of grid computing technology.
3. Project has adequate funding to complete the proposed research and leverage World Community Grid.
4. Project is not already running on another grid or supercomputer.
5. Sponsoring research organization has the capacity to complete the project and maximize the use of the results generated through World Community Grid.
6. All information in the proposal is complete and accurate.

These criteria will be used for the first phase of proposal review.

Review Criteria

Proposals that meet all selection criteria will then be evaluated according to the following Review Criteria:

1. How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields?
2. What may be the benefits of the proposed activity to society? Will there be a benefit for economically disadvantaged communities or those in developing countries?
3. What impact can World Community Grid have to accelerate the research or reduce costs?
4. Is the proposed method or approach reasonable?
5. To what extent does the proposed activity suggest and explore creative and original concepts?
6. Will the results be disseminated broadly to enhance scientific and technological understanding?

Final decisions for all applications are at the sole discretion of World Community Grid.

RFP Process

The following is the process that World Community Grid's project team will follow in reviewing and approving proposals, as well as preliminary information on the process that will take place once a proposal is selected.

1. Research organizations are invited to visit www.worldcommunitygrid.org and download a copy of the Request for Proposals and the Proposal Application.
2. Once downloaded, the research organization completes the required information (including Attachment A: Affirmation of Non-Discrimination and Patriot Act Compliance) and sends it, via email, to rfp@worldcommunitygrid.org. Submissions should not contain confidential information of the research organization. Once a proposal is selected for World Community Grid, summary information will be made available on the web site.
3. In cases where similar proposals are received from different organizations, the one received first, based on the date and time stamp of the e-mail, will receive preference, if all

requirements have been met by both proposals. World Community Grid staff may also facilitate and encourage collaboration between and among organizations submitting complimentary proposals.

4. World Community Grid's project team will review each RFP response and pre-qualify it for running on World Community Grid based on the six selection criteria provided above. During this step, the project team may contact the research organization for more information, if necessary.
5. If a proposal is complete and it is determined that the application described in the proposal meets the six selection criteria for World Community Grid, then it will be evaluated by a World Community Grid review committee.
6. External subject matter experts will review all qualified RFP's submitted by research organizations on a quarterly basis. Updated information on the schedule for reviewing and selecting proposals will be posted on www.worldcommunitygrid.org.
7. If World Community Grid accepts an application, then the World Community Grid project team will contact the research organization to inform them that the application has been accepted. Final decision for all application decisions are at the sole discretion of World Community Grid.
8. Once the acceptance is mutual, World Community Grid and the research organization both sign a Project Hosting Agreement.
9. Following the signing of the Project Hosting Agreement, World Community Grid's project team schedules the application to run on World Community Grid and builds a project plan with the research organization.
10. Following the conclusion of the project, the research organization will make results produced by World Community Grid freely available to other research organizations as provided in the Project Hosting Agreement.
11. World Community Grid will work collaboratively with research organizations to encourage public visibility and high participation in the grid project as well as wide dissemination of research findings and impact.

Contact Information

Please send any questions to rfp@worldcommunitygrid.org with your name, email address, and telephone number. Additional information and FAQs are available at www.worldcommunitygrid.org.