

Volunteer Computing With BOINC

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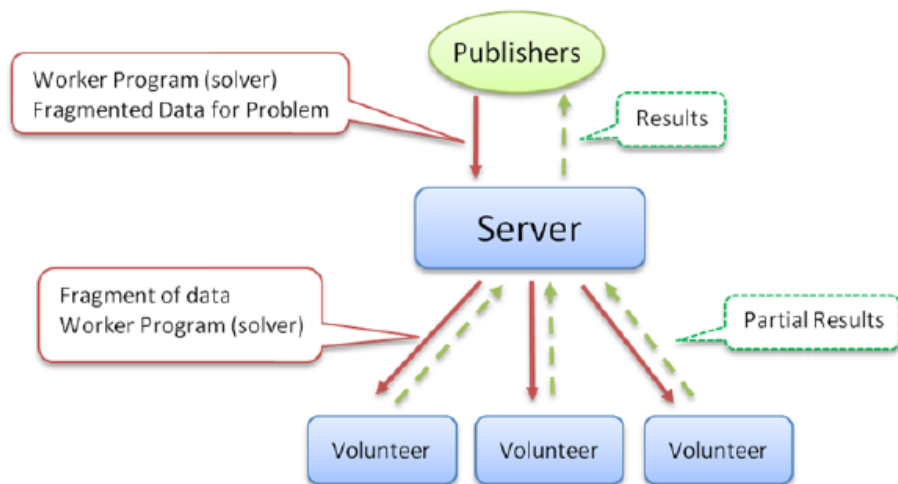
- What is Volunteer Computing?
- Volunteer Computing Architecture
- What is BOINC?
- How BOINC works?
- Examples of Volunteer Computing
- Minecraft@Home
- Conclusions

What is Volunteer Computing

Definition: Is a type of distributed computing in which people donate their computers' unused resources to a research oriented project.



Volunteer Computing Architecture



What is BOINC?

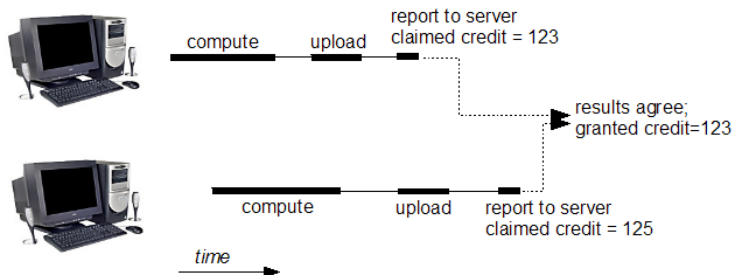


How BOINC works?

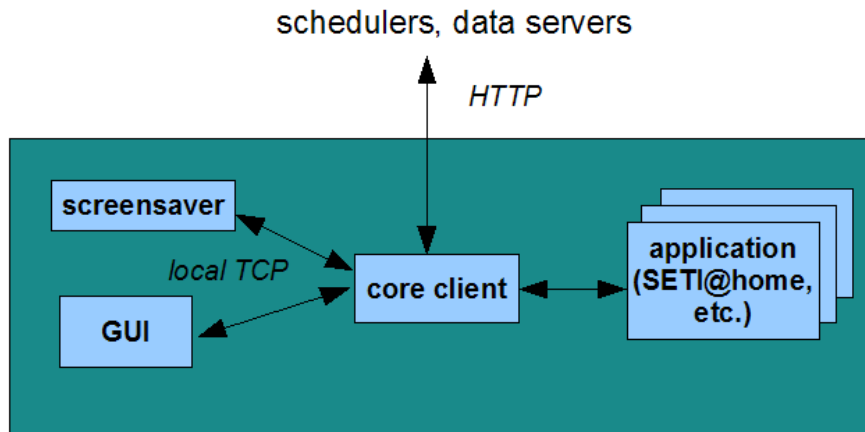
- Client Workflow
- Credit
- How the software works

- Get tasks from project **scheduling server**.
- Download executable and input files from **data server**.
- Run executables, producing output files.
- Upload output files to the **data server**.
- Report completed task to the **scheduling server**, and get new tasks.

Credit



How the software works



- **PrimeGrid:** Prime numbers
- **Minecraft@Home:** Understanding minecraft
- **NumberFields@Home:** Research in number Theory
- **GPUGrid.net:** Biomedical research
- **Einstein@Home:** Searching of weak astrophysical signals from pulsars
- **Rosetta@Home:** Protein folding and molecular shaping

- **Introduction**
- The problem
- The solution



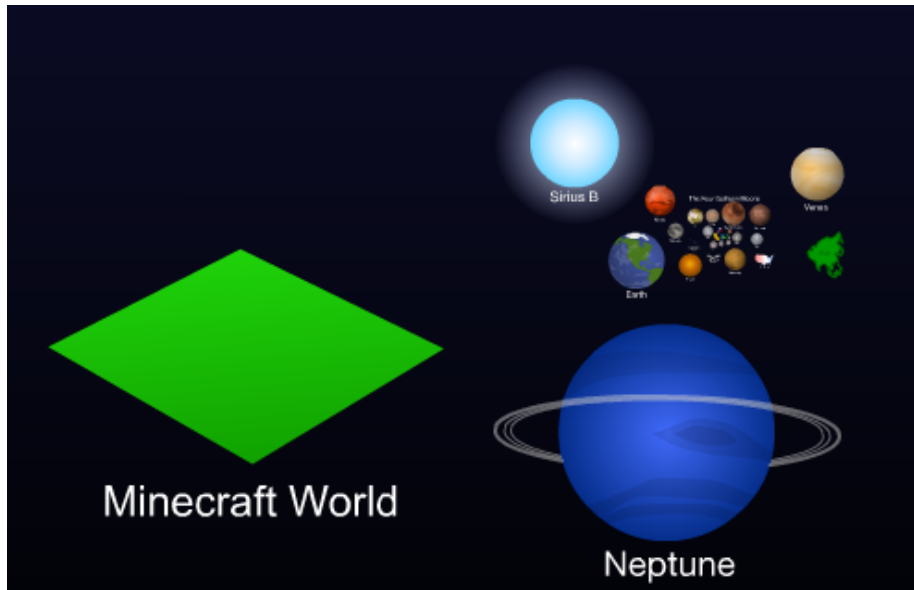
18,446,744,073,709,551,616

- Introduction
- **The problem**
- The solution





- Introduction
- The problem
- **The solution**



Advantages and Disadvantages

Advantages:

- Can achieve really big computations
- Minimum cost
- The volunteers maintain their computers
- Unlimited power

Disadvantages:

- High uncertainty
- Low granulation
- Unreliability, so it is needed a lot of redundancy
- The project has to be popular

Final thoughts