PrimeGrid's
Proth Prime Search

On 08 July 2011 02:22:20 UTC, PrimeGrid's Proth Prime Search project, through PRPNet, found a prime Fermat divisor:

$$4479*2^{226618} +1 \text{ Divides } F(226614)$$

The prime is 68,223 digits long. It is the 8th divisor found in 2011 and 291st overall.

The discovery was made by Peter Doggart of the United Kingdom using an AMD Phenom 9600 X4 @ 2.3GHz with 3 GB RAM running 32 bit Windows 7. This computer took 78 seconds to complete the primality test using LLR. Peter is a member of the PrimeSearchTeam.

The credits for the discovery are as follows:

1. Peter Doggart (United Kingdom), discoverer
2. PrimeGrid, et al.
3. Srsieve, sieving program developed by Geoff Reynolds
4. PSieve, sieving program developed by Ken Brazier and Geoff Reynolds
5. LLR, primality program developed by Jean Penné
6. OpenPFGW, a primality program developed by Chris Nash & Jim Fougeron with maintenance and improvements by Mark Rodenkirch

Fermat number divisibility (including generalized and extended) was checked by OpenPFGW using the following settings: -gxo –a2 4479*2^226618+1. For more information about Fermat and generalized Fermat number divisors, please see Wilfrid Keller's sites:

- http://www.prothsearch.net/fermat.html
- http://www1.uni-hamburg.de/RRZ/W.Keller/GFNfacs.html

There were no generalized or extended generalized Fermat number divisors.

Using a single PC would have taken years to find this prime. So this timely discovery would not have been possible without the thousands of volunteers who contributed their spare CPU cycles. A special thanks to everyone who contributed their advice and/or computing power to the search - especially all the sievers who work behind the scenes to make a find like this possible.

This is PrimeGrid's 7th prime Fermat divisor. The Proth Prime Search will continue to search for more primes. To join the search please visit PrimeGrid:
http://www.primegrid.com

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About PrimeGrid

PrimeGrid is a distributed computing project, developed by Rytis Slatkevičius, Lennart Vogel, and John Blazek, which utilizes BOINC and PRPNet to search for primes. PrimeGrid's primary goal is to bring the excitement of prime finding to the "everyday" computer user. Simply download the software and let your computer do the rest. Participants can choose from a variety of prime forms to search. With a little patience, you may find a large or even record breaking prime.

BOINC

The Berkeley Open Infrastructure for Network Computing (BOINC) is a software platform for distributed computing using volunteered computer resources. It allows users to participate in multiple distributed computing projects through a single program. Currently BOINC is being developed by a team based at the University of California, Berkeley led by David Anderson.

This platform currently supports projects from biology to math to astronomy. For more information, please visit BOINC: http://boinc.berkeley.edu

PRPNet
PRPNet is a client/server application written by Mark Rodenkirch that is specifically designed to help find prime numbers of various forms. It is easily ported between various OS/hardware combinations. PRPNet does not run each PRP test itself, but relies on helper programs, such as LLR, PFGW, phrot, and genefer to do the work.

For more information, please visit PrimeGrid's PRPNet forum thread: http://www.primegrid.com/forum_thread.php?id=1215

For more information about PrimeGrid and a complete list of available prime search projects, please visit: http://www.primegrid.com