PrimeGrid's
Sierpinski/Riesel Base 5 Problem

On 20 June 2018, 06:35:42 UTC, PrimeGrid's Sierpinski/Riesel Base 5 Problem project eliminated k=81556 by finding the mega prime:

$$81556*5^{2539960}+1$$

The prime is 1,775,361 digits long and will enter Chris Caldwell's "The Largest Known Primes Database" (http://primes.utm.edu/primes) ranked 61st overall. 32 k's now remain in the Sierpinski Base 5 Problem.

The discovery was made by Jiří Bočan of the Czech Republic using an Intel(R) Core(TM) i3-6100 CPU @ 3.70GHz with 4 GB RAM running Microsoft Windows 7 Professional Edition. This computer took about 4 hours 23 minutes to complete the primality test using multithreaded LLR. Jiří is a member of the Czech National Team.

The prime was verified on 21 June 2018, 11:41:42 UTC by Wolfgang Schwieger of Germany using an Intel(R) Core(TM) i7-7820X CPU @ 3.60GHz with 32 GB RAM running Microsoft Windows 10 Professional Edition. This computer took about 1 hours 11 minutes to complete the primality test using multithreaded LLR. Wolfgang is a member of the SETI.Germany team.

Credits for the discovery are as follows:

1. Jiří Bočan (Czech Republic), discoverer
2. PrimeGrid, et al.
3. Srsieve, sieving program developed by Geoff Reynolds
4. LLR, primality program developed by Jean Penné

Entry in "The Largest Known Primes Database" can be found here:

http://primes.utm.edu/primes/page.php?id=125396

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.

The Sierpinski/Riesel Base 5 Problem 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 and currently administered by Iain Bethune, James Breslin, Scott Brown, Ulrich Fries, Michael Goetz, Roger Karpin, Rytis Slatkevičius, and Van Zimmerman.

PrimeGrid is hosted by Rackspace, and their generous contributions have helped make this project possible.

PrimeGrid utilizes BOINC and PRPNet to search for primes with the primary goal of bringing 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, wwww, 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