PrimeGrid's
Sierpinski/Riesel Base 5 Problem

On 23 July 2014, 5:52:51 UTC, PrimeGrid's Sierpinski/Riesel Base 5 Problem project eliminated k=24032 by finding the mega prime:

$$24032*5^{1768249}+1$$

The prime is 1,235,958 digits long and will enter Chris Caldwell's "The Largest Known Primes Database" (http://primes.utm.edu/primes) ranked 54th overall. This is the largest known base 5 mega prime. 39 k's now remain in the Sierpionski Base 5 Problem.

The discovery was made by Hiroyuki Okazaki of Japan using an Intel Xeon(R) CPU E31220 @ 3.10GHz with 4GB RAM running Microsoft Windows Server 2008. This computer took about 3 hours 17 minutes to complete the primality test using LLR. Hiroyuki is a member of the Aggie The Pew team.

The prime was verified on 23 July 2014 8:30:46 UTC, by Vincent Ollivier of Canada using an Intel Core(TM) i7-3770 CPU @ 3.40GHz with 8 GB RAM running Microsoft Windows 7 Professional. This computer took about 6 hours and 35 minutes to complete the primality test using LLR. Vincent is a member of the SUPINFO team.

Credits for the discovery are as follows:

1. Hiroyuki Okazaki (Japan), 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 Know Primes Database" can be found here:
http://primes.utm.edu/primes/page.php?id=118241

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

PrimeGrid's
Sierpinski/Riesel Base 5 Problem

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, 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