

PrimeGrid's 321 Prime Search

On 24 Apr 2010 11:40:07 UTC, PrimeGrid's 321 Prime Search found another Mega Prime:

$$3 \cdot 2^{6090515} - 1$$

The prime is 1,833,429 digits long and will enter Chris Caldwell's "The Largest Known Primes Database" (<http://primes.utm.edu/primes>) ranked 17th overall. This is the second mega prime for the $3 \cdot 2^n - 1$ form, and it is the third largest found mega-digit prime using LLR.

The discovery was made by David Mumper of the United States using an AMD Quad-Core Opteron 2378 with 8 GB RAM running Linux. This computer took just over 15 hours and 24 minutes to complete the primality test. David is a member of the SETI.USA team.

The prime was verified on 26 Apr 2010 1:17:07 UTC, by Rintaro Yoshinaka of Japan using an Intel Core2 Duo E8400 @ 3.00GHz with 2 GB RAM running Windows XP. This computer took about 8 hours to complete the primality test. Rintaro is a member of Team 2ch.

Credits for the discovery are as follows:

1. David Mumper (United States), 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=92517>

Using a single core PC would have taken decades 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.

This is PrimeGrid's 8th mega prime. The 321 Prime Search will continue to seek even larger 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, 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>