PrimeGrid's
Woodall Prime Search

On 13 Aug 2007, 1:42:08 UTC, PrimeGrid's Woodall Prime Search found the 32nd and largest known to date Woodall prime:

$$2367906*2^{2367906}-1$$

Woodall numbers are of the form: $W_n=n \cdot 2^n-1$. Woodall numbers that are prime are called Woodall primes. For more information, please see "Woodall prime" in The Prime Glossary (http://primes.utm.edu/glossary).

The prime is 712818 digits long and will enter Chris Caldwell's "The Largest Known Primes Database" (http://primes.utm.edu/primes) ranked 1st for Woodall primes and 25th overall.

The discovery was made by Stephen Kohlman of Canada using an Intel C2D 6300 @ 1.86 GHz with 1 GB RAM. This computer took a little over 5 hours and 41 minutes to test. Stephen is a member of team Canada.

The prime was verified on 20 Aug 2007, 2:40:57 UTC, by Jeff Morales of the United States using an Intel Pentium 4 @ 2.8 GHz with 512 MB RAM. This computer took a little over 10 hours 27 minutes to test. Jeff is a member of team SETI.USA.

The credits of the discovery are as follows:

1. Stephen Kohlman (Canada), discoverer
2. PrimeGrid, et al.
3. MultiSieve, sieve program developed by Mark Rodenkirch
4. gcwsieve, sieve program developed by Geoff Reynolds
5. LLR, primality program developed by Jean Penné

The prime will be listed as $1183953*2^{2367907}-1$. This is $1183953*2*2^{2367906}-1$ which is $2367906*2^{2367906}-1$. Entry in "The Largest Know Primes Database" can be found here: http://primes.utm.edu/primes/page.php?id=82110

This is PrimeGrid's second Woodall prime. Since the search began, just under 85,000 tests have been completed by 2555 users using over 5100 computers.

Using a single PC would have taken years to find this prime. So this timely discovery would not have been possible without the hundreds 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 Brian Rodenkirk, Lennart Vogel, Joseph M. Osiecki, Geoffrey Reynolds, and Paul Underwood.

Additional thanks to all the sievers who prepared the work for PrimeGrid: http://www.primegrid.com/orig/forum_thread.php?id=690

PrimeGrid's Woodall Prime Search will continue to search for even larger Woodall Primes. To join the search please visit PrimeGrid: http://www.primegrid.com

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About PrimeGrid

Rytis Slatkevicius, the developer of PerlBOINC - a Perl-language-based port of the BOINC platform, created PrimeGrid as a test project for PerlBOINC. PrimeGrid's first sub-project was in cryptography as it participated in the RSA Factoring Challenge. While it no longer participates in the challenge, PrimeGrid continues to expand its functionality. Currently the project is running the following sub-projects:

- Primegen - a public sequential prime number database
- Twin Prime Search - searching for the largest known twin primes
- Cullen Prime Search - searching for the largest Cullen prime
- Woodall Prime Search - searching for the largest Woodall prime.

For more information, please visit PrimeGrid: http://www.primegrid.com

About BOINC

BOINC (Berkeley Open Infrastructure for Network Computing) 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.

For more information, please visit BOINC: http://boinc.berkeley.edu