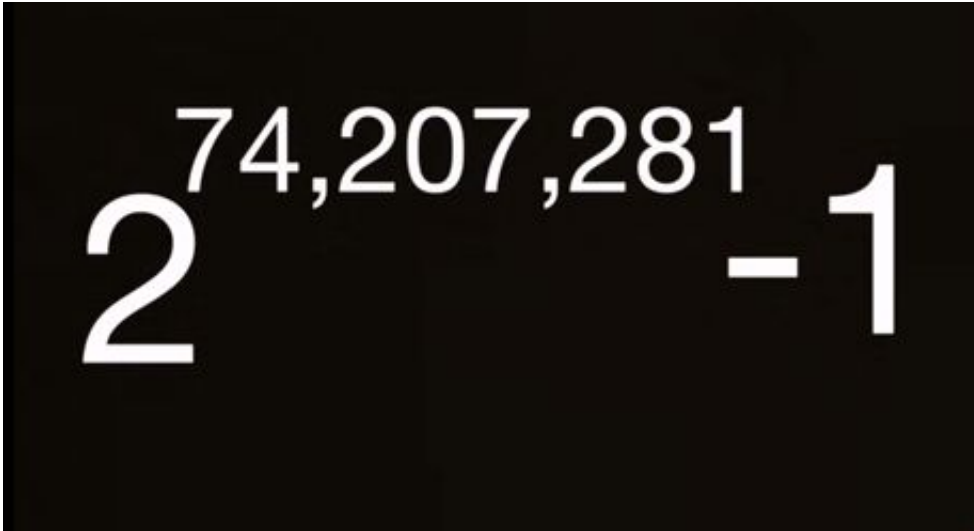


# New largest prime number found

January 20 2016, by Bob Yirka

---


$$2^{74,207,281} - 1$$

(Phys.org)—A team at the University of Central Missouri, headed by Curtis Cooper [has announced](#), via press release from the Mersenne organization, that they have found the largest prime number ever—it is  $2^{74,207,281} - 1$ , it has over 22 million digits. The new record has broken the old record by approximately 5 million digits.

Cooper and his team are part of the Great Internet Mersenne Prime Search (GIMPS) collaboration, which as its name suggests, is an effort by a lot of volunteers to find ever larger prime numbers—or, more specifically, a particular class of prime numbers that are called Mersenne, where it is one less than a power of two. Not surprisingly,

Cooper and his team also held the old record, they have actually broken the [record](#) four times. He has told the press that he was notified by an email sent by the [software](#) running on a PC that the prime number had been found. The find came after a month of number crunching on a single Intel based PC. Interestingly, the PC tried to notify Cooper and his team about the find back in September of last year, but a glitch prevented it from being sent. It was only during a maintenance cycle that the message reporting the number prime number found, was sent. The official discovery date is January 7<sup>th</sup>.

The search for new and bigger prime numbers is conducted using software developed by the GIMPS team, called prime95—it grinds away, day after day, until a new prime number is found. And while the numbers that it finds are of interest, they no longer serve much if any practical use, the software has been used for other purposes though—it has found flaws in Intel CPUs, for example.

The new prime number has been named M74207281—in the press release, the team says that it was "calculated by multiplying together 74,207,281 twos then subtracting one." It has already been tested and confirmed by three different independent teams running software on different machines. The find makes Cooper eligible for a \$3000 award. The GIMPS group also made known their goal of winning a hundred and fifty thousand dollar award by finding a prime number with 100 million digits.

© 2016 Phys.org

Citation: New largest prime number found (2016, January 20) retrieved 23 April 2024 from <https://phys.org/news/2016-01-largest-prime.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is

provided for information purposes only.