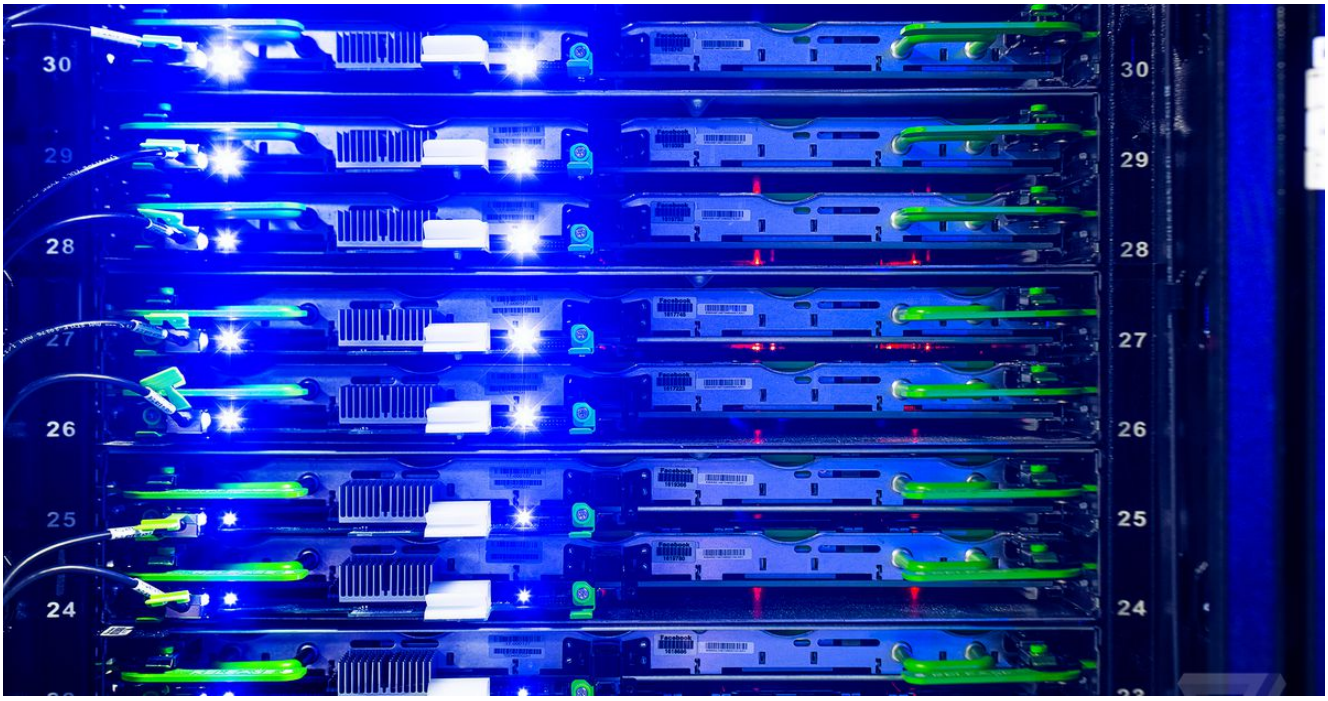
Facebook’s Libra won’t be as power-hungry as Bitcoin



Libra, Facebook’s new cryptocurrency, is expected to have a smaller environmental footprint compared to some of its more notorious blockchain brethren, including bitcoin, according to experts. Its energy demands are projected to be more like those of existing data centers — which, while still demanding, aren’t quite as energy-hungry as mining bitcoins.

The currency hasn’t launched yet, so it’s hard to know how those claims will stack up against reality. But its design — more centralized than most cryptocurrencies — means that Libra will likely draw less energy. Unlike its more decentralized peers, only a few trusted members of the Libra Association, the centralized hub for the currency, can create Libra.

an order of magnitude more efficient than bitcoin

“This is an order of magnitude more efficient than bitcoin will ever be,” says Ulrich Gallersdörfer, a researcher at Technical University of Munich focused on blockchain research. Gallersdörfer was the co-author on a recent paper in *Joule* finding that bitcoin operations emit more climate-warming gas

than the country of Jordan.

Bitcoin uses so much energy because people who want to hold the cryptocurrency have to compete for it. That means bitcoin mining operations need huge amounts of computing power to snag a single coin, and to stay in the running, they all need to be running a set of complicated problems all at once. That uses a *huge* amount of energy every year — in 2018, researchers estimated that bitcoin used about as much energy as Ireland.

By contrast, Libra is designed so that an algorithm issues units of the cryptocurrency in proportion to the size of a company's initial deposit into the system. That's still a lot to keep track of, but it's nowhere near as complicated as a mining operation. Instead, it's more like… normal data centers. Now, data centers draw power, too. In fact, data centers accounted for 2 percent of the *total* US energy usage in 2014, a 2016 study published by the DOE found. And they're also responsible for about as many carbon dioxide emissions as the airline industry. But despite those drawbacks, these specially designed warehouses of servers are the rocks on which tech giants like Facebook continue to build and expand their digital empire.

"Facebook or other companies will have to set up servers, will have to run the software, will have to validate transactions. But that's not really anything different to running regular services for Facebook.com or for WhatsApp," Gallersdörfer says.

a useful way to generally consider how to make data centers less environmentally terrible

Facebook has made concerted efforts to make their centers more sustainable, but the energy demand prompted by Libra might be a useful way to generally consider how to make data centers less environmentally terrible. The easiest thing to do is make sure that the existing resources are used efficiently — so that might mean more efficient hardware. But it also means

considering the vast amounts of water used to cool servers: in a lot of cases that fresh water flows through the system and gets discarded, a horrifying waste, especially in areas with water shortages.

One way to meet the challenge in a water-scarce world is to reuse water as often as possible, says Emilio Tenuta, vice president of sustainability at EcoLab. But water can't be reused forever in cooling systems. As it gets heated and moves through the pipes, salts and other contaminants – think of scale from hard water forming in a bathroom – can build up in the machinery, making it less efficient. But by constantly monitoring and treating the water as it goes through a system, companies like Ecolab hope they can recirculate water through cooling systems as often as possible, reducing the amount of water used in data centers overall.

Making existing centers more efficient is great, but products on the scale of Libra could mean new data centers – and where they are matters. Companies could save themselves (and the world) a lot of environmental angst by simply looking for better locations to put data centers in the first place, Katrina Kelly-Pitou says.

The area where we're failing, in the United States, is cleaning our power supply

Kelly-Pitou, an urban systems strategist with architecture and engineering firm SmithGroup, says that companies should look for places with trained software engineers – to keep the servers running smoothly – and abundant, low-carbon power sources. By relying on a nearby hydroelectric dam, wind farm, or nuclear plant instead of coal or natural gas, data centers could dramatically cut their carbon footprint. That's because ultimately, every data center relies on the energy grid. And that's where many current data centers are falling short.

"The area where we're failing, in the United States, is cleaning our power supply, and ensuring that we have clean

energy to power the economic development that we want," Kelly-Pitou says.

Libra hasn't launched. We don't know if it will take off. But for it to even get off the ground, it will need data centers — and developing greener data centers, and a lower-carbon energy grid to power them is something that could pay off no matter what.

https://www.theverge.com/2019/6/20/18693014/facebook-libra-cryptocurrency-bitcoin-environment-energy-data-center