Q&A

Why OpenAI's Data Center Plan Hinges on a Little-Known Startup

Crusoe's Bill Stein and Chase Lochmiller. Photos via Getty and Crusoe.

By Anissa Gardizy

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The artificial intelligence race is lifting previously unknown data center startups that say they can move faster than bigger developers.

The latest is Crusoe, which on Tuesday announced a deal to borrow $3.4 billion to develop a data center that could eventually become one of the largest in the world. Oracle, a cloud provider, will lease the site and rent servers with Nvidia's artificial intelligence chips to OpenAI, The Information has reported.

The Takeaway

- OpenAI plans to use a cluster of Nvidia GB200 chips in the Texas site by early 2025

- Founders Fund is in talks to lead new equity financing of Crusoe
- Enlarging the Texas data center site could cost tens of billions of dollars

On the heels of signing the high-profile deal, Crusoe, founded in 2018, is raising equity financing. Founders Fund, an existing Crusoe and OpenAI shareholder, is in talks to lead the equity investment, and Felicis Ventures, an existing investor in Crusoe, is considering participating, said a person involved in the funding effort.

Crusoe was valued at $1.4 billion around April 2022, when it was generating revenue at a pace of $100 million per year, or more than $8 million per month. It projected more than $100 million in revenue in 2023. Its new proposed valuation couldn't be learned, but it would likely be higher than $2 billion, the person said.

"AI is a very capital-intensive investment," said Crusoe CEO Chase Lochmiller. "The scale that we're seeing this unfold is something that we've never witnessed before." (He declined to identify the Abilene site's customers or discuss the equity funding.)

To arrange the loans for the Abilene project, Crusoe formed a joint venture with Blue Owl Capital, an alternative asset manager, and Primary Digital Infrastructure, a new fund founded by several well-known data center executives. Crusoe will be the sole developer and operator of the site, meaning it is in charge of contracting with construction contractors and data center customers, as well as running the data center after it is built.

OpenAI CEO Sam Altman has expressed concerns about falling behind rival Elon Musk in the AI data center race and about Microsoft's ability to provide OpenAI with enough servers. That may explain his decision to work with Oracle and Crusoe.

Rendering of the completed Abilene data center via Crusoe

Altman's data center plans took on new urgency following Musk's rapid development of an AI supercomputing server cluster in Memphis, Tenn., earlier this year for xAI.

OpenAI expects to use around 50,000 of Nvidia's upcoming AI chips, known as the GB200, in the Abilene facility by the first quarter of next year, according to The Information's AI Data Center Database. That would make it one of the first facilities to have that many GB200s, according to the database. The site is projected to scale to 100,000 GB200s by the fall of 2025.

The deal came together quickly. Crusoe in June announced a deal to work with a company called Lancium, which had been developing the site for bitcoin mining for the past few years. By July, Crusoe had signed a pact with Oracle, and both of them then struck a deal with OpenAI after promising a swift timeline for the initial GB200 cluster, according to two people who have been involved. (While OpenAI struck the data center deal, Microsoft's Azure cloud unit is officially renting it to the ChatGPT owner because Azure is OpenAI's exclusive cloud provider.)

Crusoe plans to make 1 gigawatt of energy available there by mid-2026, and OpenAI is in talks with Oracle to use the entire site, The Information has reported. That's enough power for a large city—or, in this case, to run hundreds of thousands of AI chips. Lochmiller said the company eventually wants to double that power capacity. Developing the site to that scale could cost tens of billions of dollars.

Crusoe started out as a data center and cloud computing provider for cryptocurrency miners before pivoting to AI. That's similar to the story of CoreWeave, another startup that now runs AI servers for Microsoft and other AI developers and was recently valued by investors at about $20 billion. It borrowed $7.5 billion for its operations earlier this year.

Crusoe, which is also known as Crusoe Energy, initially powered its data centers using natural gas that burns during oil extraction, in an effort to reduce carbon emissions. It now uses other types of power in order to scale faster, according to an existing investor. By early 2022, Crusoe was operating nearly 100 facilities for crypto miners. It has raised at least $500 million in equity financing so far, including from Valor Equity Partners, which is known for backing Musk's privately held ventures.

The Information on Monday separately interviewed Lochmiller and former Digital Realty CEO Bill Stein, who serves on Crusoe's board of advisors and whose new fund is part of the Abilene joint venture. They discussed the project, how data center firms are moving faster than incumbent developers like Microsoft, and the prospect of nuclear power for data centers.

These interviews have been edited for length and clarity.

Why does a joint venture make sense for Abilene, Texas?

Chase Lochmiller: It's not too dissimilar from the way the solar industry works, in terms of having [property company] and [operating company] structures. You have one entity that actually owns the solar farm or the wind farm, and there's actually project capital that supports that and earns a yield. And then you have sort of a parent company that is the operating company and would own a lot of the [intellectual property].

We will not own the project company 100%, and the reason to do that is just the scale of capital required to build these large scale data center assets.

How important is the lease that Crusoe was able to sign [with a customer] for you to be interested in it? [The Information has previously reported that Crusoe signed the deal with Oracle, which plans to rent capacity to OpenAI.]

Stein: It is critical. That provides the credit for the [debt] financing. The lenders care about the quality of the credit. End customers and applications are always part of the calculus. But I'm sure you can appreciate the fact that the customers are very concerned about maintaining their confidentiality for security reasons.

How were you able to sign deals with major customers?

Lochmiller: Speed matters a lot. To give it some context, we didn't break ground on that [Abilene] site…we didn't put a shovel on the ground until June. [Part of the data center is] being turned over to our customer next month.

The speed of execution on all this stuff is truly remarkable compared to what the market is traditionally seen here.

What is Crusoe doing differently?

Lochmiller: We have unique approaches to manufacturing and construction.

How we think about building these large scale data centers…it is kind of modular in nature. A lot of the components that make up a big data center can actually be manufactured off-site in more controlled manufacturing environments, so that when they show up on site, you almost have a prefab component. It makes the construction process more parallelized and faster, especially in some of these more challenging areas that have smaller labor pools to tap into.

Stein: Crusoe is a small, nimble, entrepreneurial firm. There's an awful lot of good associated with Microsoft, it was my largest customer at [Digital Realty, where he was CEO], I love the team there. But I don't think anybody would accuse them of being small and nimble.

[Microsoft] has lots of internal controls. It has to play by the rules that are imposed upon it by their various checkpoints within the company. They have processes that they need to follow. (A Microsoft spokesperson didn't have a comment on the record.)

Chase doesn't have many processes. [Lochmiller] is the process.

What kind of urgency are you seeing from customers? Is anyone changing their processes to speed up their timeline?

Lochmiller: Certainly from these big tech companies, [there is] the biggest sense of urgency I've ever seen.

Historically, the data center industry has been mainly focused around…hubs, markets like Northern Virginia. [G]iven the limited amount of capacity that can be developed in a very near timeline in those markets, and it's shifted more towards, 'Where can I actually get energy?'

I also think that people are sort of relaxing some of their [other] infrastructure criteria. Different people come to us with, 'Hey, we actually don't even need backup generation. We don't need this, we don't need that.' A lot of these considerations have been relaxed in the support of being able to deliver faster.

Stein: Because the demand is so great, the hyperscalers [an industry term that typically refers to large cloud providers] need to go to where the power is. That's really why they ended up in Abilene.

As to why any hyperscaler would choose to do business with a third party developer versus building it themselves, it's time to market. Who controls the site and who can bring it to market faster?

What are the largest projects that you have heard of?

Lochmiller: I've heard about 10 gigawatt-scale projects. For us, our goal with this first site is to eventually develop it into two gigawatts. We're in discussion with folks that are looking for something like five gigawatts. [See previous stories on five- and 10-gigawatt AI data center projects here and here.]

What are the biggest challenges of building out large AI data centers?

Stein: They're very dense from a power standpoint. These chips throw off a lot of heat and they have to be cooled. Old-style data centers used air cooling, and the new style [needs] liquid cooling. It used to be on the rack, now it's actually the chip. It's a new technology, and it is complicated.

What are you seeing on the nuclear power front?

Stein: I think it is the future…but it is not the near-term. There are a number of very credible players in this small nuclear reactor space, and I would hope that by 2030, which seems to be the timeline everybody's established, that [nuclear] represents a solution. Wind and solar are great, but occasionally the wind stops blowing and the sun doesn't shine at night. You can always store [energy] in batteries, but it doesn't really provide for 100% of the power needs of a data center.

Are there other kinds of emerging technologies that you're excited about?

Stein: Hydrogen fuel. That is also a potential source of power.

Natasha Mascarenhas, Kate Clark, Aaron Holmes and Amir Efrati also contributed to this article. A previous version of this article incorrectly said Stein is on Crusoe's board of directors. He's on its board of advisors.

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