


BOOTING UP

World's fastest supercomputer is getting ready to power on in Houston

 John Egan Mar 25, 2019, 12:39 pm



DownUnder Geosolutions, which has its U.S. headquarters in Houston, is getting ready to flip the switch on what is being billed as the world's fastest supercomputer. *Photo via DUG.com*

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An Australian company that provides geoscience and tech services to the oil and gas industry is gearing up to flip the switch in Katy on what's being billed as the world's fastest supercomputer.

At the 20-acre Skybox Houston data center campus in the Energy Corridor, DownUnder Geosolutions is assembling a 15-megawatt data center that will house more than 40,000 servers to create the world's fastest supercomputer. Houston is the U.S. headquarters for DUG.

The data center will power a cloud computing service, known as DUG McCloud, that's tailored to the geosciences sector. The company says DUG McCloud will supply "enormous" computing capacity and high-performance storage for DUG's cloud business.

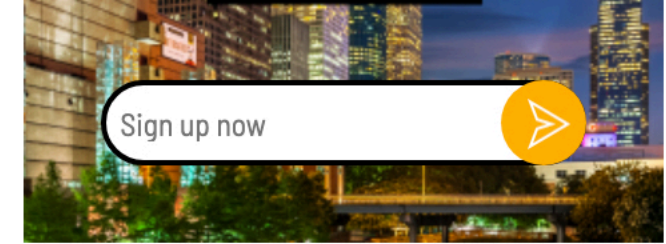
Construction on DUG McCloud – which has been delayed due to recent heavy rains – is set to be completed in April, according to the [company's blog](#).

"DUG McCloud will be available to external companies to expand their computational resources on demand," the company says on its blog. "In addition, the cloud service will give clients access to DUG's proprietary software, with the option of source code, to accelerate their research, development, and production."

DUG McCloud is being touted as the world's biggest cloud computing service for the oil and gas industry. Among its prospective clients are global oil companies, government-owned oil producers, seismic contractors, and data companies.

"DUG McCloud is offering a wide range of companies the opportunity to significantly accelerate their oil and gas projects with cutting-edge geophysical software, stacked with extraordinary supercomputer power and services," Mick Lambert, the newly hired manager of DUG McCloud, said in December.

So, just how extraordinary will DUG's new supercomputer be?



DUG's equipment – contained in a building designed to withstand hurricane-force winds up to 190 mph – will offer more than 250 single-precision petaflops of computing speed, or 250,000 trillion calculations per second.

For now, the world's fastest supercomputer is Summit, a collaboration between the U.S. Department of Energy and IBM. Its top speed is 200 petaflops. Summit operates at Oak Ridge National Laboratory in Tennessee.

Over the long term, DUG envisions its data center being able to handle exascale computing, capable of generating at least 1 quintillion calculations per second. A quintillion has twice as many zeroes as a billion does. China is set to debut the world's first exascale supercomputer in 2020 – a year ahead of the first one to be established in the U.S., a \$500 million public-private project called Aurora being developed by the Department of Energy and Intel.

DUG's deal for its data center in Katy represents the largest data center transaction in the Houston area's history. Dallas-Fort Worth, Austin, and San Antonio have long overshadowed Houston as hotspots for data center activity in Texas.

Matthew Lamont, co-founder of DUG, said in October that the company conducted an "exhaustive" search for the data center. "Houston was a natural choice," he said, "given the low cost of power and the fact that Skybox had the available infrastructure ready to go."

A unique feature of DUG's data center is how the servers will be cooled. The company's patent-pending DUG Cool system will immerse all of the servers in custom-designed tanks filled with an environmentally friendly cooling fluid.

DUG says this fluid enables condensed water-cooling chillers to be used to cool the servers, rather than server fans and refrigeration units. This will reduce energy consumption by 45 percent compared with traditional air-cooled systems, according to DUG.

"We like to call it the greenest cloud service in the world," Lamont said on DUG's blog. "DUG McCloud certainly offers more than just a silver lining."

The DUG center represents about 65 percent of the 23 megawatts of data center space under construction in the Houston area, according to a new report from commercial real estate services company CBRE.

"As high-performance computing continues to grow in importance to the energy sector, it is likely that additional latency-sensitive deployments will grow in the Houston market," Haynes Strader, senior associate at CBRE, says in a news release.

"Latency-sensitive" refers to the need for technology to act quickly in response to various events.