

Why Do Computers Use So Much Energy?

“Microsoft is currently running an interesting set of hardware experiments. The company is taking a souped-up shipping container stuffed full of computer servers and submerging it in the ocean. The most recent round is taking place near Scotland’s Orkney Islands, and involves a total of 864 standard Microsoft data-center servers.



“Precise estimates vary, but currently about **5 percent** of all energy consumption in the U.S. goes just to running computers—a huge cost to the economy as whole. Moreover, all that energy used by those computers ultimately gets converted into **heat**. This results in a second cost: that of keeping the computers from melting.”



EEC 116, B. Baas

<https://news.microsoft.com/features/under-the-sea-microsoft-tests-a-datacenter-that-is-quick-to-deploy-could-provide-internet-connectivity-for-years/>



Microsoft, June 5, 2018

Under the sea, Microsoft tests a datacenter that's quick to deploy, could provide internet connectivity for years



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Microsoft's Underwater Datacenter 2-year Update

“Earlier this summer, marine specialists reeled up a shipping-container-size datacenter coated in algae, barnacles and sea anemones from the seafloor off Scotland’s Orkney Islands.

“Microsoft’s Project Natick team deployed the Northern Isles datacenter 117 feet deep to the seafloor in spring 2018.”

“We were pretty impressed with how clean it was, actually,” said Spencer Fowers, a principal member of technical staff for Microsoft’s Special Projects research group. “It did not have a lot of hardened marine growth on it; it was mostly sea scum.”

“We left it filled with dry nitrogen, so the environment is pretty benign in there,” Fowers said.

“Our failure rate in the water is one-eighth of what we see on land,”

