

Microsoft datacenters in Singapore

As more people and businesses rely upon technology to stay connected, informed, and productive, digital needs in Singapore and around the globe are growing. And that means the need for hyperscale datacenters is growing too.

Hyperscale brings hyper efficiency. Microsoft cloud services offer customers an energy-efficient and carbon neutral alternative to running their own private datacenters. [Research](#) shows that Microsoft cloud services are up to 93 percent more energy efficient than traditional enterprise datacenters.

As part of our commitment to building a sustainable future, Microsoft strives to empower the communities where our employees live, work, and operate our datacenters. With that, it's important we share information to ensure you understand why datacenters are needed, Microsoft's commitments to responsible operations, and the benefits of hosting a datacenter in your community.

[Why datacenters >](#)

[Microsoft commitments >](#)

[Community benefits >](#)

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Cloud computing powers our digital world

Cloud computing is the delivery of computing services over the internet. Common daily activities are made possible through cloud computing, such as:



Email



Online banking



File storage



Collaboration



Online shopping



Mobile apps

Cloud computing can provide consumers and businesses with the benefits of data sovereignty and privacy, lower costs, easier access, higher reliability, and lower carbon footprint.

The Microsoft Cloud is for everyone

The Microsoft Cloud serves over 1 billion customers and 20 million companies worldwide.

Organizations in Singapore relying on the Microsoft Cloud include large enterprises, startups, governments, hospitals, banks, schools, and other organizations that contribute to a modern society.



When Microsoft joins a community, we bring our commitments for a better world



Microsoft datacenters are key to our sustainability goals

Carbon negative by 2030

In 2018, Microsoft signed a renewable energy agreement with Sunseap Group, marking the largest-ever solar project in Singapore.

Power usage effectiveness (PUE) measures **cloud energy efficiency**. Lower PUE indicates more energy-efficient datacenters, with a PUE of 1.0 being the best score. The new Microsoft Singapore datacenters had a **12-month average PUE of 1.364** through **February 2022**.

Leadership in Energy and Environmental Design (LEED) is the world's largest green building certification program. LEED provides the framework for healthy, highly efficient, lower carbon emissions and cost-saving green buildings. LEED certification is a globally recognized symbol of sustainability achievement and leadership. **New Microsoft datacenters are designed to be LEED Gold certified.**

Globally, Microsoft datacenters use fossil fuel generators for backup power during the rare grid emergency, which accounts for **less than 1 percent of our overall emissions**. For our backup generators, we expect to transform to a renewable fuel blend by 2027.

Water positive by 2030

Due to climate and humidity in Singapore, the Microsoft datacenter uses NEWater and mechanical cooling to keep servers at the proper temperature for operation. NEWater is a reclaimed water source produced from further purifying treatment water. In 2021, the Microsoft datacenter in Singapore utilized **305 million liters of reclaimed water for cooling** with an efficiency rate of **1.97 L/kWh**.

A second datacenter, which is currently being constructed, will use indirect evaporative and mechanical cooling. The design WUE is 1.9 L/kWh.

Zero waste by 2030

Microsoft has a goal to achieve 90 percent diversion of datacenter operational waste by 2030. To reach this goal, we're working closely with our waste haulers to optimize waste diversion programs across our global datacenter portfolio.

In 2020, we successfully opened our **first Microsoft Circular Center in our North Holland datacenters**, which is designed to extend the life cycle of servers through reuse and support a circular economy for the Microsoft Cloud.

By the end of 2022, we will bring the first Microsoft Circular Center to Singapore. Microsoft Circular Centers are able to process **12,000 servers per month for reuse**.

Globally, Microsoft **datacenters reuse 78 percent of our end-of-life assets and components**; the remaining **22 percent of materials are recycled**. We are continuing to research further methods to reduce waste by determining new recycling solutions for used air filters and fiber-optic cables.

Since 2020, Microsoft has donated more than USD370,000 to projects supporting community-identified priorities



Microsoft partnered with **Generation Singapore**, a nonprofit organization with a mission to prepare, place, and support people in life-changing careers that would otherwise be inaccessible. [#GetReadySG](#) was launched with multiple government entities to address the demand-supply gap for local skilled talent in tech and a need to align government policies with employers' business models. Over a two-year pilot, three priority tech programs were launched, equipping 1,000 underserved jobseekers with relevant skills for the future of work.



In a partnership focused on the island of Bintan, **Microsoft, Yayasan Ecology's Ecology Foundation, and Seven Clean Seas (SCS) collaborated** to develop robust ocean plastic cleanup capabilities, community-level plastic interception strategies, and coastal community waste management. As part of the program, Seven Clean Seas is also building a redeemable coupon system which allows for the deposit of clean household plastic waste; in return, people are offered bulk rice and refillable water containers.

Microsoft datacenters create family-wage operations and construction jobs as well as positive impacts to the local economy

Microsoft datacenters represent a capital-intensive investment and long-term commitment to the community. Since the datacenter opened in 2010, **more than 100 full-time employees and contractors** work across the Microsoft Singapore datacenter campus. Construction began on a second Singapore datacenter location in 2019 and **more than 2.8 million hours** have been worked on construction projects, with an average of **725 construction jobs per year**.



Construction jobs

- Electricians
- Plumbers and pipefitters
- Carpenters
- Structural iron and steel workers
- Concrete workers
- Earth movers



Datacenter operations

- Campus management
- People management
- Learning and development
- IT operations
- Mechanical engineers
- Electrical engineers
- Security contractors
- Building maintenance