

6 Read the following article about Cloud, Edge and Fog computing and then translate the information about each type into a comparative table.

There are now over 50 billion connected devices in the world, so modern networks have an enormous load to bear. Today's wireless connections must support everything from self-driving cars and data storage systems to warehouse robotics and video analytics. Edge computing addresses those bandwidth challenges by carrying computing topology closer to its source. At its simplest, it narrows the gap between data storage and the devices that need it so that latency problems can be resolved. At first glance, the cloud's basic premise of creating a centralized data source that can be accessed anywhere in the world looks like the opposite of edge computing's local data handling idea. However, in many ways, it's the cloud itself that created edge computing. Without centralized data storage, the big data movement would never have achieved such scope. Many online payment providers wouldn't exist, for example, and brand titans like Microsoft and Amazon would be different from what they are today.

1. DEFINING THE BASICS

The IT industry came up with the word "cloud" for its amorphousness. Its name is the perfect metaphor to define its function. Much like a floating cirrus cloud, the data or "water" it provides can reach people all over the world.

So, in contrast, what is edge computing? To extend the cloud metaphor, it would be more like a faucet. It brings data (or water) right to your doorstep but supplies nothing to your neighbors. The differences don't end there, though.

Cloud Computing Definition

Cloud computing relies on a remote server network to store and use data off-site. Like our figurative cirrus cloud, it can supply data to a large number of people at once. The cloud doesn't require you to maintain your own infrastructure; thus, no capital investment or staffing costs are needed in that area.

Edge Computing Meaning

Any edge computing definition should emphasize that this model doesn't rely on data centers or the cloud. Instead, it brings computing closer to a data source to minimize potential distance-related challenges. Much like our figurative faucet, it delivers its resources quickly and cheaply through fairly basic infrastructure. When things go wrong, it's also straightforward to troubleshoot.

2 WEIGHING UP THE PROS AND CONS: EDGE COMPUTING VS. CLOUD COMPUTING

The cloud was designed to overcome the limitations of local storage. It brought the world on-demand data storage and new levels of computing power. That changed the way businesses and individuals approached their IT assets. Dropbox launched an era of floating file access, while service providers like Amazon Web Services (AWS) brought the business world a new approach to software. Both companies turned data storage and computing into a sailing cirrus that you could access anytime from anywhere, no matter which device you had on hand. Remote work became easier to achieve than ever before, and apps could be accessed and developed by multiple specialists simultaneously. In short, the cloud's benefits include:

- Access to masses of storage space without the costs involved in storage infrastructure.
- Speeds that would be prohibitively expensive to achieve on your own.
- Remote data access that allows workers to collaborate from any country or device.
- The potential for Software as a Service (SaaS) pricing structures, which makes expensive software scalable and remarkably affordable. SaaS lets businesses pay a regular premium to "rent" software instead of buying it. It costs a fraction of a software product.
- Reduced risk of data losses.

- No need for a large in-house IT department.

You need the cloud if you use remote teams, need to extend local data storage capacity, or want to streamline your IT operations. In addition, key digitalization technologies like IoT (Internet of Things) depend on the cloud as a central location to store, process, and analyze data. It's also ideal if you expect rapid growth and need access to certain innovative software that is being offered through cloud-based subscription models. By contrast, edge computing benefits include:

- Reduced latency, so your apps usually function smoothly when working with real-time data.
- Data privacy and security is more straightforward to implement locally.
- Edge computing combined with IoT technology saves you bandwidth, thereby allowing you to choose where to best dedicate your resources.

Edge computing allows you to analyze your devices before sending data to the cloud—and that's where the magic happens. If your industry requires adherence to strict privacy laws or you have a tight IT strategy, for example, then edge computing gives you the right blend of benefits. That said, the best solution to the cloud-vs-edge debate is to use both. Separately, each solution is a lone voice. Together, they're a choir.

3 EDGE COMPUTING VS. FOG COMPUTING

Fog computing blends both edge and cloud computing. By doing so, it stretches the cloud to the edge of the network so that it's easier to connect IoT devices in real-time. By incorporating the benefits of both edge and cloud technology, it achieves a high-level network environment. It can connect two disparate ecosystems without losing local storage benefits. Fog computing reduces latency between devices while simultaneously reducing bandwidth requirements. It opens up exciting possibilities for several industries. Autonomous self-driving cars, smart cities, and real-time analytics are all at their best with fog computing. Its capacity to transfer data right at the edge of remote areas makes it suitable for roaming use cases as well. Fog computing is, effectively, edge computing with wheels.