

# AN INTRODUCTION TO DISTRIBUTED CLOUDS



A trend in cloud data processing is making things better for businesses yet again. Gartner says, [more than 50 percent of data](#) generated by enterprise business will be held and processed outside a typical single cloud or central data center environment by 2022. That's a steep jump from 10 percent today. So, what is this distributed cloud trend and how are enterprise businesses using it to add power to their infrastructure? Keep reading to find out.

## What is a distributed cloud?

If you're in IT, it's likely you may have come across a distributed database. If that's so, you may have a reasonable concept of distribution. In a distributed database, data is processed across the infrastructure, using computing nodules that each have their processing capabilities versus one central core. The goal is better performance and [security](#).

In the age of cloud services, the [Internet of Things](#) and web services platforms have already disrupted digital businesses, forcing the heavy hand of change. With that change comes new challenges to enterprise infrastructure. For example, performance and security are at the top of the minds of industry leaders.

Some enterprise businesses have adopted a new cloud philosophy that will shape their business infrastructure in the years to come: edge computing. [Edge computing](#) is the idea that ensuring the proximal location point of computing services is as close as possible to where your customers are. If you are a national or international company, this can propose a challenge.

Enter the distributed cloud, a form of cloud services infrastructure that uses smaller, individual clouds, each with their own processing capabilities, to perform a variety of services for customers across a single network.

## **Why use distributed cloud architecture at the edge?**

There are many benefits to deploying a distributed cloud architecture at the edge. They are as follows:

### **Enable local processing**

One important advantage of this approach is that it allows for local processing, or at least as close to local as possible. Distributed clouds offer the advantage of having smaller cloud service processing units closer to your user source all over the region, country, or the world.

By considering the distance between where your customers are making throughput actions and where your cloud actually processes the data, you can ensure better bandwidth and less latency. That's due to the fact that all the data is being processed across a set of locations versus one central location. And the set of locations is based strategically around areas with numerous customers, so the data doesn't have to travel as far to meet its processing destination, increasing both better performance and security.

### **Be in compliance with important regulations**

Some regulatory agencies, including the EU, have standards for data that require that data doesn't travel outside a user's country. For that reason, it's important to establish an action plan for processing data in countries where you have customers. A distributed cloud allows you to do this.

### **Enhance your data security**

In a centralized data processing approach, your data is at greater risk of a cyber attack. Think about it. If all of your important data is housed in one location, if someone is able to get past your firewalls, security, monitoring and encryption, they have access to all of your customer data. In that case, a potential cyber threat could shut down your entire application for however long it takes to address it.

By managing data across many smaller clouds, successful hackers who break into a single location will only have access to a small percentage of your user's information, and they will have more points they must access to get all of your information. This makes you less vulnerable to cyber attacks, and if they do occur, they are less harmful to your overall business. In addition, if you have to shut down one cloud nodule for maintenance or to prevent a cyberattack, the rest of your business will be unaffected by the decision to do so.

### **Offers redundancy in the case of a disaster**

This leads us to the concept of redundancy. When you deploy a cloud network of computing systems, you can ensure redundancy. For instance, cloud data storage and processing located near Manhattan users can have a redundant cloud server near Omaha backing up all user data. This allows for access to user data, even in the event of an emergency.

## **Improve overall performance**

When latency, bandwidth, and security metrics improve, your customers benefit from better performance of cloud services. A distributed cloud architecture allows customers to have the best experience possible today with your cloud services.

## **Supports innovative technology**

If you're just starting to experiment with artificial intelligence (AI) and IoT in your business, you're not alone. When AI and IoT require low latency for quick decision making, they are better supported by a distributed cloud architecture than they are by centralized architecture for the reasons already mentioned. The improved performance allows decision-makers and other employees responsible for monitoring the technology to make smart decisions faster than ever.

## **Provides central management with decentralized processing**

One big benefit of distributed cloud infrastructure is that you can still manage your network of cloud data servers with one centralized interface, allowing you to ensure compliance, monitor security, access customer data and more.