



A Guide to Cloud Computing: Which Solution Is Best for You?

Though the term “cloud computing” has only recently entered into common use, it is not a new concept. The idea has been at the core of computer operations since the earliest days of the mainframe. Today, though, cloud computing is rapidly becoming the norm in both personal and business contexts.

In terms of hardware, cloud computing is defined by who owns the server and where it's located. In this sense, there are three cloud types:

1. **Public:** With the public cloud, the server is owned by another company (such as Amazon or Microsoft). You, the user, essentially rent server time from that company to complete a project or to access a scalable server solution.
2. **Colocation:** With colocation, users own their server hardware but house it in someone else's infrastructure. A colocation service provider might have many racks of servers, each server or rack belonging to a different company. Your server and racks are secured, and only users you authorize can access them.
3. **On-premise:** With on-premise computing, you own the server and the infrastructure. You have a dedicated server room or data center, you handle all expenses (i.e., space, connectivity, power, cooling), and you hire the staff to maintain the necessary infrastructure.

It is also possible to take a **hybrid approach**. For example, you might have an on-premise data center and replicate your data to a collocated server, or you might use a public cloud for some applications while hosting a private cloud in your own data center.

There is no single cloud-computing model that suits every organization. Your selection should be based on your particular business priorities and needs.

Evaluating Your Cloud Needs and Capabilities

To determine which type of cloud solution is right for you, consider the following:

- **Cost to purchase or rent:** What is your budget, what do you already own, and what is the initial capital outlay for each potential solution?
- **Ongoing costs:** How much will each solution cost from month to month?

- **Physical space:** If you choose a private cloud solution, does your organization have space for an on-premise data center?
- **Personnel needs:** Do you have staff qualified to monitor and maintain a data center of your own?
- **Data security:** Is it acceptable for your data to reside in someone else's infrastructure? Or, does your organization require full control of access to both its data and hardware?
- **Scalability:** Will your storage needs grow or shrink significantly in the future? How scalable is each type of cloud storage solution?
- **Redundancy:** Do you have a plan to provide redundant data backups, power sources, and climate control?

Using the answers to these and other questions, set your organization's priorities. Which considerations are non-negotiable? Which would be nice to have, but aren't necessarily requirements? Knowing your immediate needs, your current capabilities, and your possible future needs will help you make the best decision for your company's cloud solution.

Understanding the Options

In order to select an appropriate cloud computing solution, consider the benefits and drawbacks of each option and evaluate them against your budget and priorities.

CLOUD TYPE	BENEFITS	DRAWBACKS
PUBLIC	<ul style="list-style-type: none"> • Public cloud has low initial costs and is easy to establish. • Renting server space in a public cloud is great if you have a very specific, limited project in mind. • Public is also an excellent option if you are looking for a scalable server solution. 	<ul style="list-style-type: none"> • Your data resides in someone else's environment, which could give rise to backup and security concerns. • Reliability can be an issue as well, with public cloud outages carrying the potential to render associated websites unavailable to users.
COLOCATION	<ul style="list-style-type: none"> • You have control over the data and who accesses it. • Colocation carries defined infrastructure costs because the data center service provider maintains and monitors the building, power, and staff 24/7. <p>Large colocation facilities can often offer lower prices for Internet connectivity due to consolidated deals for many users under one roof.</p>	<ul style="list-style-type: none"> • Your servers are housed in someone else's infrastructure, and may not be easy for you to physically access. • It might be more cost-effective for larger companies with many racks of their own to build and maintain their own data centers. • It may be difficult to scale down your operation if you are in a long-term contract with the colocation service provider.

CLOUD TYPE	BENEFITS	DRAWBACKS
ON-PREMISE	<ul style="list-style-type: none"> You have complete control of your data, the servers, and the infrastructure in which they are housed. If you have a business with extensive cloud computing needs, an on-premise solution can be more cost-effective than pay-as-you-go public or colocation cloud services. 	<ul style="list-style-type: none"> Setting up your own data center can be a sizable and ongoing capital investment that includes square footage, servers, racks, Internet bandwidth, climate control, redundant power sources, security, data backup, and staff to monitor for outages 24/7. A destructive event that strikes your facility (fire or flooding) could wipe out your data if it's not backed up elsewhere.

Implementing a Solution

Once you have selected your cloud computing platform(s), begin implementation by adapting your current resources to the new solution. Your existing infrastructure very likely includes different servers sprawled over multiple applications, operating systems, and hardware platforms. If this is the case, consolidate and virtualize your computing environment. In other words, move to a completely virtual environment so the hardware becomes less relevant to the actual data that's residing on that hardware.

Thereafter, consider your software options. For example, Open Stack is a popular choice, and Microsoft System Center is a top contender for enterprises. Next, decide how you're going to manage your data and allocate resources among users and departments.

Remember, a customized on-premise solution is best if you're running it at the right capacity. That way, you won't have to pay a middleman to hold your data. You control the hardware and where it is located, which in turn helps you control the latency—the time it takes for the information to leave the server and get to the end user—plus costs and access.

Getting Help from the Experts

Some organizations decide against a custom on-premise cloud solution for a variety of reasons. Some are concerned about security, costs, or overloading their data centers. Others may not have the in-house expertise to implement a solution with confidence. Unfortunately, companies that try to avoid a private server solution when they really need one usually end up spending more money and experiencing poor computing performance in the long run.

What if your organization wants to solve its data storage problems with an on-premise, virtualized private cloud solution, but you do not have the expertise and resources to evaluate cloud storage needs and implement an appropriate on-premise server solution? Consider partnering with a custom server provider that has deep knowledge of the latest

technologies available and proven expertise in customizing hardware configurations for a wide variety of organizations and application needs.

Look for a highly collaborative provider that will work closely with your in-house team to understand the current and future needs of your organization. The right supplier can steer you away from costly purchasing mistakes and optimize the equipment to better match your organization's needs, reduce waste, and maximize scalability with the latest technology.

How Servers Direct Can Help You Eliminate Cloud Confusion

Servers Direct is a custom server solutions provider that will work collaboratively with members of your organization to configure the ideal solution for your computing needs. Your Servers Direct consultant will ask you many questions and probe deeply into your current and projected computing and storage needs. They work with you on an ongoing basis to maintain and adapt your solution to changing technology and business requirements.

Servers Direct understands that some organizations will have larger pain points in certain areas. For example, some markets will have very long lifecycles, so they can't change the hardware configuration for several years at a time. Other markets will have severe challenges with their budgets. Still others may have technology pain points that can't be solved with a standard configuration. For all of these markets, a customized solution makes sense.

One of the main advantages Servers Direct offers companies that cannot use public or colocation cloud solutions is the ability to customize a private solution by working directly with top industry vendors. Servers Direct has direct access to roadmaps from many leading hardware manufacturers, including Intel, Seagate, LSI, Supermicro, Adaptec, and Western Digital. This means that Servers Direct not only has access to the products that are being delivered today but also the products that are coming in up to a year from now.

With Servers Direct by your side, you gain the expertise and flexibility to move your organization to a private, on-premise cloud computing solution that is configured precisely to meet your needs. Servers Direct has the knowledge to customize your system to suit your space, budget, and growth expectations—not to mention access to the very best server hardware. Collaborate with the proven experts. Your cloud solution will be as cost-effective as it can be and remain entirely under your control.

Servers Direct is a premier provider of advanced build-to-order server and storage solutions for use in enterprise, data centers, education, government, and the private sector. For more than 10 years, IT professionals have relied on Servers Direct expertise to help develop custom matched solutions with uncompromised quality and support.

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