

WHITE PAPER

Public and Private Clouds



Cloud Computing: Public or Private Cloud?

Cloud computing has led the way for the newest wave of technology changes. Today's largest companies, most notably Oracle, SAP, Apple, Google, and Microsoft have turned to the cloud to increase efficiency and decrease costs.

Cloud computing is increasingly relevant to businesses and consumers, yet 'the cloud' remains a 'cloudy phenomenon' for many.

Cloud computing is basically the practice of using remote computing storage and processing resources via the Internet (in this context, known as 'the Cloud'). In simple terms, cloud computing means storing and accessing data and programs over the Internet instead of a computer's hard drive. In a setup formally known as enterprise cloud computing, businesses plug-in to the resources, services even staff of a remote data center. This means that even the smallest businesses have the ability to access powerful data processing and storage at lower costs than ever before.

Most organizations that consider the journey into cloud computing are seeking : stabilized or predictable IT costs, assistance with data center consolidation efforts, 24x7x365 technical support, or the ability to leverage a more efficient, high-performing technical platform. Either a public or private cloud can be a major step forward in realizing these objectives.

Which cloud, however, is the right choice for your business – public or private cloud? Further, what exactly is the difference between the two cloud platforms?

Secure-24, an NTT Communications Company, has more than 17 years of delivering mission critical application hosting, comprehensive managed IT, cloud and security services to enterprises worldwide.

The explosion of cloud computing and the lower costs for computing power are enabling a great deal of innovation and economic growth.

This white paper navigates the complex and dynamic cloud ecosystem, by taking a close look at what makes a public cloud – public, and a private cloud – private.

"Cloud" Hosting Defined

The level of understanding – or lack thereof – about Public and Private Cloud hosting continues to be a phenomenon.

Exactly what is a 'cloud'? What is the difference between a public and a private cloud, and why is it important? Lastly, how do you know which platform is right for your IT environment?

What is 'The Cloud'?

In the simplest terms, the cloud is just a metaphor for the Internet. cloud computing means storing and accessing data and programs over the Internet instead of your computer's hard drive.

Public Cloud Hosting

Public cloud hosting is defined as a multi-tenant environment, where organizations purchase a “server slice” in a cloud computing environment that is shared with other clients or tenants. A public cloud is one based on the standard cloud computing model, in which a service provider makes resources, such as applications and storage, available to the general public over the Internet.

Private Cloud Hosting

Private cloud is a type of computing that delivers similar advantages to public cloud, including scalability and self-service, but through a proprietary architecture. Unlike public clouds, which deliver services to multiple organizations, a private cloud is dedicated to a single organization. It may be owned, managed, and operated by the organization, a third party, or a combination of the two, and may exist on or off premise.

The Evolution of Cloud Computing

The evolution of cloud computing over the past few years is potentially one of the major advances in the history of computing.

Clouds have been around for a long time and nearly everyone has seen the familiar cloud illustration in documents about the Internet. The Cloud computing emerged as a new computing paradigm which aimed to provide reliable, customized and QoS guaranteed dynamic computing environments for end-users. The cloud icon makes one think of that extraordinary 'place' where computing magic happens – 'out there' on the Internet, a much improved innovation since the days of floppy disks and CD-ROMS.

Technically, clouds are a virtual environment comprised of computer networks, servers, storage, applications and services that are accessible on-demand. These resources can be, and most likely are, scattered around the globe in multiple physical locations. However, most clouds have a primary physical location that houses the primary cloud infrastructure.

The term 'cloud' has evolved over the years from an icon representative of the entire Internet, to an icon that represents a specific application or Website that performs a specific function on the Internet.

Today, if you see the familiar cloud icon, you need to understand the context in which it is shown to understand if it represents the whole Internet or if it represents a single cloud.



Public vs. Private Cloud: What's the Difference?

There is a significant difference between public and private cloud, but the basic architecture is similar.

A public cloud architecture has shared infrastructure resources (e.g. servers, network routers and switches, storage devices, etc.). The public cloud platform can be provisioned, maintained and managed by third-parties who are responsible for the infrastructure and client access, or it can be provisioned and managed by the organization that contracted with the cloud service provider. Public clouds are generally viewed as a commodity type resource for defined products with limited flexibility.

Security within a public cloud varies. While many public clouds have offerings around higher levels of security, they are often fixed offerings and may not be as flexible to individual business or industry audit compliancy requirements or IT General Controls (ITGC).

Private clouds are those that are built exclusively for an individual enterprise. They allow an organization to host applications in the cloud, while addressing concerns regarding data security and control, which is often lacking in a public cloud environment. There are two variations of private clouds: on-premise private cloud or externally-hosted private cloud.

Lastly, the high availability of public clouds is mandatory if public clouds are to be trusted and used. Generally the tasks of monitoring, backups and disaster recovery are left in the hands of the client to implement and test.



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Public and Private Clouds
An In-Depth Look at the Technology, Design and Opportunities

Common Characteristics of Public and Private Clouds

Both public and private clouds have a number of common characteristics. Fundamentally, at their core, they are both highly virtualized environments that provide an abstraction layer between virtual systems and physical hardware. They are both highly available with up to 99.99 percent uptime. They both have reliable disaster recovery plans in place which are tested on a regular basis. Each type provides physical security around the data center, which includes protecting the HVAC (Cooling System), the incoming UPS (uninterruptable power supply) and access to multiple Network Carriers.

Although a private cloud shares many of the same characteristics as a public cloud, there is significantly more security associated with accessing any resources. Private clouds can be deployed either within an enterprise to serve multiple business units, or through a cloud hosting provider to allocate portions of the private cloud to individual clients.

In a private client environment, there is an expectation that access to and from the Internet is limited to the minimal requirements and transverse multiple layers of security. While private clouds do provide flexibility and the ability to rapidly add resources, this is generally performed through a defined process with sign-off and accountability. Generally, pricing is much more predictable than a public cloud.

There is a high expectation of security in today's private cloud and hosted environments. Many times this is provided through what is referred to as a Defense in Depth strategy. This is a security strategy that employs multiple layers of security between the infrastructure, network, operating system and application. This includes advanced firewalls to detect application exploits, network learning defenses that can mitigate distributed denial of service (DDoS) attacks, intrusion detection systems on the Operating System to identify if and when anything changes, and application hardening to minimize the application's exposure to threats.

Comparing Managed Cloud Providers

A third party cloud hosting and services provider, that is properly equipped can provide either a private or public cloud, but if you are looking for a private cloud, the number one item on your list of essential criteria is data sovereignty. You will also want complete operational control of your systems with enhanced security. The following are considerations when selecting a third party provider:

1. Does the vendor offer application virtualization in addition to desktop virtualization and the tools to manage everything?
2. Can the vendor minimize your costs by leveraging your existing technology investments?
3. Does the vendor help you with architectural assistance, deployment guidance and other best practices that apply to your cloud?
4. Is the vendor's infrastructure scalable and flexible to accommodate your needs to ramp up or down?

Most organizations that consider the journey into cloud computing are seeking: predictable IT costs, assistance with data center consolidation efforts, 24x7x365 technical support, or the ability to leverage a more efficient, high-performing technical platform. Either a public or private cloud are a major step in realizing these objectives.

Ideal Use Cases for Public or Private Clouds

Ideal use cases for public cloud are organizations who need to:

- Quickly right size the IT department
- Rapid deployment
- Improved collaboration and project management
- Predictable pricing with a "pay as you go" models

In many cases, organizations use public cloud however, private clouds are a better option for organizations with the following requirements:

- Decrease costs and lower TCO
- Maintain compliance with strict governance, regulatory & industry requirements
- Specialty hardware requirements
- Decrease network latency
- Enhance security requirements to protect client data
- Back-up and disaster recovery plans

Which Type of Cloud is Right for You?

To determine whether public or private cloud, is best for your business, consider:

1. The need for data sovereignty, meaning do you want total control over your data and IT environment.
2. Do you need a computing and data-management system that follows specific guidelines for compliance with local, state and federal rules?
3. Do you need consistency across all services? If a third party hosts your environment, you will receive a service level agreement (SLA) to ensure security and compliance.
4. Do you need to take leverage server virtualization for greater efficiency?
5. Does your business require reliable backup services along with a solid Disaster Recovery plan.
6. Do you need predictable IT costs or to lower your TCO?
7. Does your business need to update hardware or applications to optimize performance of your IT environment?

Private cloud is the right choice if:

- You need sovereignty over your data. This means you want total control over your environment, especially your data.
- You need a computing and data-management system that follows specific guidelines to be in compliance with local, state and federal rules.

Public cloud is the right choice if:

- You need consistency across all services. If a third party hosts your environment you will receive a service level agreement (SLA) that helps you meet all of our requirements.
- You need to take advantage of server virtualization for greater efficiency.
- You need reliable backup services along with a solid Disaster Recovery plan.
- You need predictable IT costs and to lower your TCO.
- You need to upgrade your hardware/software to optimize the overall performance of your IT environment.



On-Premise or External Hosting?

The decision to manage a cloud platform on-premise or with a third party hosting/service provider is an integral part of a cloud strategy. The more common option is public cloud externally hosted in enterprise-class data centers. It is important to note that companies who deploy public clouds share the same infrastructure pool with limited configurations and security protections, as these factors are managed and supported by the service provider.

Private clouds can be hosted either on-premise or externally by a service provider. On-premise private cloud is hosted within the organization's data center, whereas, an externally hosted private cloud environment is hosted by a third party cloud service provider. Cloud service providers facilitate an exclusive cloud environment with minimized security risk. This format is recommended for organizations that prefer not to use a public cloud infrastructure due to the risks associated with sharing physical resources.

To learn more about how outsourcing your applications and infrastructure to Secure-24 can help your organization lower costs and achieve optimal performance of your mission-critical systems, contact us at:

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About Secure-24

Headquartered in Southfield, Michigan, Secure-24, an NTT Communications Company, has 17 years of experience delivering mission critical application hosting, comprehensive managed IT, cloud and security services to enterprises worldwide. Its industry-leading client satisfaction rates result from comprehensive service level agreements and a focus on superior service and support.

The company is an SAP certified Hosting, HANA, and Cloud Partner, a Microsoft Silver Partner and an Oracle Gold Partner managing Oracle E-Business Suite, PeopleSoft, JD Edwards and Hyperion applications across all industries for businesses of every size.

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