CLOUD COMPUTING

You're on vacation when the Child Who Hates Shoes steps on a rusty nail. The doctor asks when she had her last tetanus shot. As if you can remember. But then you tap an app to access a record of her shots, search for "tetanus," and—hurray!—no needle necessary. That's because your data is stored "in the cloud."

What is the cloud? Where is the cloud? Are we in the cloud now? These are all questions you've probably heard or even asked yourself. The term "cloud computing" is everywhere.

What is cloud computing?

Cloud computing, often referred to as simply "the cloud," is the delivery of on-demand computing resources—everything from applications to data centers—over the internet on a pay-per-use basis, similarly as we billed for telephone or gas usage at home. Companies offering these computing services are called cloud providers.

Types of Cloud deployment:

Public Cloud

Public clouds are owned and operated by a third-party cloud service provider, which deliver their computing resources like servers and storage over the Internet.

With a public cloud, all hardware, software, and other supporting infrastructure is owned and managed by the cloud provider. You access these services and manage your account using a web browser.

Private Cloud

A private cloud refers to cloud computing resources used exclusively by a single business or organization. A private cloud can be physically located on the company's on-site datacenter.

Some companies also pay third-party service providers to host their private cloud. A private cloud is one in which the services and infrastructure are maintained on a private network.

Hybrid Cloud

Hybrid clouds combine public and private clouds, bound together by technology that allows data and applications to be shared between them. By allowing data and applications to move between private and public clouds, hybrid cloud gives businesses greater flexibility and more deployment options.

Types of Cloud services: IaaS, PaaS, SaaS

Most cloud computing services fall into three broad categories and these are sometimes called the cloud computing stack, because they build on top of one another. Knowing what they are and how they're different makes it easier to accomplish your business goals.

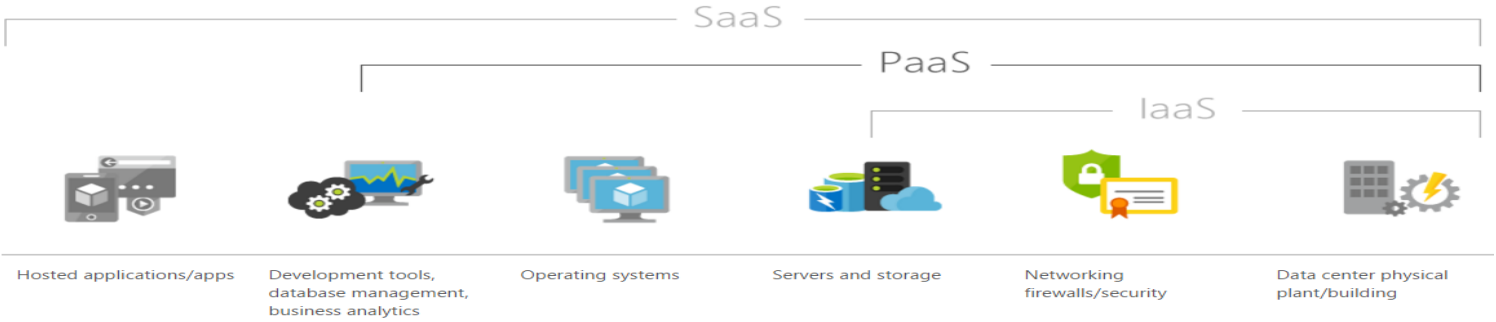
Infrastructure as a service (IaaS) is an instant computing infrastructure, provisioned and managed over the Internet. Quickly scale up and down with demand, and pay only for what you use.
IaaS helps you avoid expense and complexity of buying and managing your own physical servers and datacenter infrastructure. Each resource is offered as a separate service component, and you only need to rent for as long as you need it. The cloud provider manages the infrastructure, while you purchase, install, configure, and manage your own software—operating systems, middleware, and applications.
Example : AWS, Go GRID, RACKSPACE.COM

Platform as a service (PaaS) is a complete development and deployment environment in the cloud, with resources that enable you to deliver everything from simple cloud-based apps to sophisticated, cloud-enabled enterprise applications. You purchase the resources you need from a cloud service provider on a pay-as-you-go basis and access them over a secure Internet connection.

Like IaaS, PaaS includes infrastructure—servers, storage, and networking—but also middleware, development tools, business intelligence (BI) services, database management systems, and more. PaaS is designed to support the complete web application lifecycle: building, testing, deploying, managing, and updating.

PaaS allows you to avoid the expense and complexity of buying and managing software licenses, the underlying application infrastructure and middleware or the development tools and other resources. You manage the applications and services you develop, and the cloud service provider typically manages everything else.
Example: AZURE, APP ENGINE, FORCE.COM

Software as a service (SaaS) allows users to connect to and use cloud-based apps over the Internet. Common examples are email, calendaring, and office tools (such as Microsoft Office 365).
SaaS provides a complete software solution that you purchase on a pay-as-you-go basis from a cloud service provider. You rent the use of an app for your organization, and your users connect to it over the Internet, usually with a web browser. All of the underlying infrastructure, middleware, app software, and app data are located in the service provider's data center. The service provider manages the hardware and software, and with the appropriate service agreement, will ensure the availability and the security of the app and your data as well.
Example: GOOGLE DOCS, GMAIL, GOOGLE DRIVE, FRESHBOOKS



Benefits

Cost: Cloud computing eliminates the capital expense of buying hardware and software and setting up and running on-site datacenters—the racks of servers, the round-the-clock electricity for power and cooling, the IT experts for managing the infrastructure. It adds up fast.

Speed: Most cloud computing services are provided self service and on demand, so even vast amounts of computing resources can be provisioned in minutes, typically with just a few mouse clicks, giving businesses a lot of flexibility and taking the pressure off capacity planning.

Scalability: The benefits of cloud computing services include the ability to scale elastically. In cloud speak, that means delivering the right amount of IT resources—for example, more or less computing power, storage, bandwidth—right when its needed, and from the right geographic location.

Productivity: On-site datacenters typically require a lot of "racking and stacking"—hardware set up, software patching, and other time-consuming IT management chores. Cloud computing removes the need for many of these tasks, so IT teams can spend time on achieving more important business goals.

Performance: The biggest cloud computing services run on a worldwide network of secure datacenters, which are regularly upgraded to the latest generation of fast and efficient computing hardware. This offers several benefits over a single corporate datacenter, including reduced network latency for applications and greater economies of scale.

Reliability: Cloud computing makes data backup, disaster recovery, and business continuity easier and less expensive, because data can be mirrored at multiple redundant sites on the cloud provider's network.

References:

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