CLOUD COMPUTING

end-recipient: *utente finale*
ongoing: *continuo*
slice: *fetta, porzione*
tenant: *occupante, inquilino*
underlying: *sottostante, che è alla base*

The origin of the expression *cloud computing* appears to derive from the practice of using drawings of stylised clouds to denote networks in diagrams of computing and communication systems.

Cloud computing is the delivery of computing and storage capacity as a service to a community of end-recipients on the Internet. It is like having computing resources delivered in the same way as electricity or water. There are three types of cloud computing:

- **Infrastructure as a Service (IaaS)** – It is the most basic model. Cloud providers offer computers as physical or, more often, as virtual machines and other resources. The virtual machines are run as guests by a hypervisor. These resources are supplied on demand. This makes it possible for companies to store or process large amounts of data on virtual machines without having to invest a lot of money in hardware.
- **Platform as a Service (PaaS)** – Cloud providers deliver a computer platform normally including the operating system, programming language execution environment, database and web server. Application developers can develop and run their software solutions on a cloud platform without the cost and complexity of buying and managing the underlying hardware and software. A series of applications and services are in the cloud without the need of downloading them on host computers.
- **Software as a Service (SaaS)** – Cloud providers install and operate application software in the cloud, and cloud users access the software form cloud clients. The cloud users do not manage the cloud infrastructure and platform on which the application is running. This eliminates the need to install and run the application on the cloud user's own computer.

According to the way in which the services are offered, cloud computing can further be classified as public, private or hybrid.

- **Public Cloud Computing** is a multi-tenant environment in which a server shares the same hardware, storage and network devices as other tenants, or users, in the cloud. The model is a pay-as-you-go model, which means that users pay by the hour for the computer resource that they use.
- **Private Cloud Computing** is a single-tenant environment where the hardware, storage and network are dedicated to a single client or company. The hardware is dedicated so, in this case, companies pay a fixed amount for the service.
  - **Virtual Private Cloud Hosting**, a hybrid version, is a multi-tenant environment where companies achieve networking isolation and save money by buying hardware slices with other tenants and creating private subnets. It is the same as sharing a holiday apartment with other users, you pay for the portion of service (time/quantity) that you use.
  While the above mentioned services are generally addressed to large organisations, **cloud storage** is a service also addressed to private users. It refers to an online space that can be used to store data remotely and in a secure way. Cloud storage is usually provided using a large network of virtual servers that also come with tools for managing files and organising the virtual space.

1 ✏️ **Complete the following sentences with words from the text on the left.**

1. Cloud computing is ....

2. The expression *cloud computing* derives from ....

3. There are three types of ....

4. Cloud providers offer computers, as physical or virtual ....

5. Cloud providers deliver a computing platform including operating system, ...

....

6. Application developers can develop their software on a cloud platform without ....

....

7. The cloud users do not manage the cloud infrastructure and platform on which ....

....

8. Cloud applications can be multi-tenant, that is, ...

9. Virtual Private Cloud Hosting is ....

10. Cloud storage is ....

2 ✏️ **Read the text and choose the right heading for each paragraph.**

compliance • customisable • hybrid deployment • no contracts • security
self-managed • shared hardware • utility model

Public cloud computing

1. .... Public clouds normally deliver a pay-as-you-go model, where you pay by the hour for the computer resources you use.

2. .... If you want to shut down your server after only 2 hours of use, there is no contract requiring your ==ongoing== use of the server.

3. .... Because the public cloud is by definition a multi-tenant environment, your server shares the same hardware, storage and network devices as the other tenants in the cloud.

4. .... With the pay-as-you-go utility model, self-managed systems are required for this business model to make sense.

Private cloud computing

5. .... Because private clouds are dedicated to a single organisation, the hardware, data storage and network can be designed to assure high levels of security that cannot be accessed by other clients in the same data centre.

6. .... Different types of compliance can be delivered through a virtual private cloud or fully private cloud deployment, because the necessary hardware, data storage and network configurations are dedicated to a single client.

7. .... Hardware performance, network performance and storage performance can be specified and customised in the private cloud.

8. .... If a dedicated server is required to run a high speed database application, that hardware can be integrated into a private cloud, in effect, hybridising the solution between virtual servers and dedicated servers. This cannot be achieved solely in a public cloud.

Adapted from: http://www.onlinetech.com/resources/references/public-vs-private-cloud-computing

ACTIVITIES