



MODELS OF CLOUD COMPUTING

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Cloud Service Providers (CSPs) offer three service models and four deployment models. The service models provide customers with the ability to use a provider's cloud services. The deployment models offer customers different ways of using cloud services.

SERVICE MODELS

- **Software as a Service (SaaS):** SaaS is a software distribution model in which customers purchase a service to use applications hosted by a CSP. The service is made available for use over the Internet. SaaS is becoming very popular as it allows users to access software from any computer. Examples include Gmail, Google Docs, and Office 365.
- **Platform as a Service (PaaS):** With PaaS, customers can create and run custom web-based applications. PaaS provides the facilities required to build, deliver, and support web applications and services available through the Internet without requiring developers or end users to download or install specialized software. Examples include Microsoft's Azure App Service and Salesforce's Force.com.
- **Infrastructure as a Service (IaaS):** With IaaS, customers can access fundamental computing resources such as servers, data storage, and networking equipment. Customers can use the CSP's equipment to deploy and run software as they see fit. Examples include Amazon's Elastic Compute Cloud (EC2) and Simple Storage Service (S3).

DEPLOYMENT MODELS

- **Public cloud:** In a public cloud, the CSP's infrastructure and resources are available to the general public over the Internet. The CSP's infrastructure is completely external to the customer's organization.
- **Private cloud:** A private cloud is a computing environment operated specifically for one customer. It may be managed by the customer or the cloud provider, and it may be located in the customer's own data centre or in the cloud provider's data centre. A private cloud gives the customer greater control over the infrastructure and computational resources. It has the potential to provide greater security and privacy.
- **Community cloud:** A community cloud may be established when several organizations have similar privacy, security, and regulatory requirements and seek to share infrastructure.
- **Hybrid cloud:** A hybrid cloud is the combination of two or more clouds (public, private, or community). Each member cloud remains a unique entity, but is bound to the others through standardized or proprietary technology that enables the portability of applications and data between members.

WHERE CAN I LEARN MORE?

For more information on the different service and deployment models, see the National Institute of Standards and Technology (NIST) *Special Publication 800-145 The NIST Definition of Cloud Computing*.

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