**What is cloud computing?**

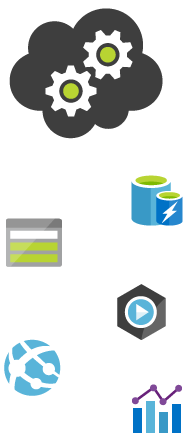
The practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or a personal computer.

Cloud computing is the delivery of computing services—**servers**, **storage**, **databases**, **networking, software, analytics** and more—over the Internet (“the cloud”). Companies offering these computing services are called cloud providers and typically charge for cloud computing services based on usage, similar to how you are billed for water or electricity at home.

**Uses of cloud computing**

You are probably using cloud computing right now, even if you don’t realise it. If you use an online service to send email, edit documents, watch movies or TV, listen to music, play games or store pictures and other files, it is likely that cloud computing is making it all possible behind the scenes. The first cloud computing services are barely a decade old, but already a variety of organisations—from tiny startups to global corporations, government agencies to non-profits—are embracing the technology for all sorts of reasons. Here are a few of the things you can do with the cloud:

* Create new apps and services
* Store, back up and recover data
* Host websites and blogs
* Stream audio and video
* Deliver software on demand
* Analyse data for patterns and make predictions



## Top benefits of cloud computing

Cloud computing is a big shift from the traditional way businesses think about IT resources. What is it about cloud computing? Why is cloud computing so popular? Here are 6 common reasons organisations are turning to cloud computing services:

### 1. 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.

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### 2. 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.

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### 3. Global scale

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.

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### 4. 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.

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### 5. Performance

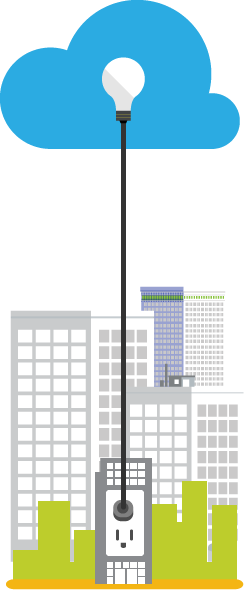
The biggest cloud computing services run on a worldwide network of secure datacenters, which are regularly upgraded to the latest generation of fast and efficient computing hardware. This offers several benefits over a single corporate datacenter, including reduced network latency for applications and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

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### 6. 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.

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## Types of cloud services: IaaS, PaaS, SaaS

Most cloud computing services fall into three broad categories: infrastructure as a service (IaaS), platform as a service (PaaS) and software as a service (Saas). These are sometimes called the cloud computing stack, because they build on top of one another. Knowing what they are and how they are different makes it easier to accomplish your business goals.

### Infrastructure-as-a-service (IaaS)

The most basic category of cloud computing services. With IaaS, you rent IT infrastructure—servers and virtual machines (VMs), storage, networks, operating systems—from a cloud provider on a pay-as-you-go basis.

### Platform as a service (PaaS)

Platform-as-a-service (PaaS) refers to cloud computing services that supply an on-demand environment for developing, testing, delivering and managing software applications. PaaS is designed to make it easier for developers to quickly create web or mobile apps, without worrying about setting up or managing the underlying infrastructure of servers, storage, network and databases needed for development.

### Software as a service (SaaS)

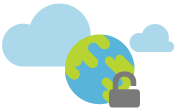
Software-as-a-service (SaaS) is a method for delivering software applications over the Internet, on demand and typically on a subscription basis. With SaaS, cloud providers host and manage the software application and underlying infrastructure and handle any maintenance, like software upgrades and security patching. Users connect to the application over the Internet, usually with a web browser on their phone, tablet or PC.

## Types of cloud deployments: public, private, hybrid

Not all clouds are the same. There are three different ways to deploy cloud computing resources: public cloud, private cloud and hybrid cloud.

### 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. Microsoft Azure is an example of a public cloud. 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.



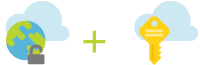
### Private cloud

A private cloud refers to cloud computing resources used exclusively by a single business or organisation. 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.



## How cloud computing works

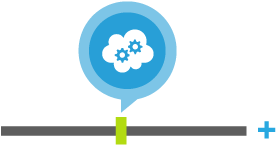
Cloud computing services all work a little differently, depending on the provider. But many provide a friendly, browser-based dashboard that makes it easier for IT professionals and developers to order resources and manage their accounts. Some cloud computing services are also designed to work with REST APIs and a command-line interface (CLI), giving developers multiple options.

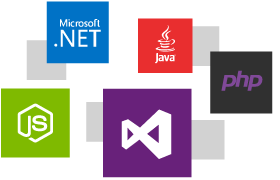
**Azure Cloud Services:**

* Deploy highly-available, massively-scalable applications and APIs
* Focus on apps, not hardware
* Support for Java, Node.js, PHP, Python, .NET and Ruby
* Autoscale to meet demand and save money
* Deploy thousands of instances in minutes
* Integrated health, monitoring, and load balancing
* Automatic operating system and application patching

## Create highly-available, massively-scalable applications and APIs

Develop, package and deploy powerful applications and services to the cloud with Azure Cloud Services and the click of a button. Scale from 1 to 1000 in minutes. Once your application is deployed, that’s it—from provisioning and load balancing, to health monitoring, Azure handles the rest. Your application is backed by an industry-leading 99.95% monthly SLA.





## Integrated development experience with Visual Studio and the Azure SDK

Get your hands on an excellent development experience using the Azure SDK, which integrates seamlessly with Visual Studio. Deploy applications using any language you like, including .NET, Java, Node.js, PHP, Python or Ruby. Test your application before deploying it to the cloud by using Azure Emulator, which brings the platform’s key functionality right to your development computer.

## Focus on building great applications, not babysitting hardware

You don’t have to worry about patching, faulty hardware or network issues. Use Azure Cloud Services to deploy your application, keep it continuously available during crashes and failures and redirecting traffic from troubled instances to ones that are running smoothly. Automatic operating system updates mean that your application is always highly secure, without maintenance windows or downtime.

