

How Does Cloud Computing Work?

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We are already in the Cloud

Cloud Computing is Internet-based processing, where computing infrastructure, software applications, business processes and collaboration and information capabilities are delivered to computers and other devices (such as smart phones and tablet PCs) on demand over the Internet. So, the "cloud" we're talking about is not a white puffy thing in the sky, it's the metaphor used to describe capabilities that are available via the Internet.

Cloud Computing is the latest buzz word around a number of Internet services that already are available as well as those services that will yet come. It's the next phase in the Internet's evolution though we've already started our relationship with the cloud some time ago.

Familiar Cloud-Based Services

If you use any of the popular public email services like Yahoo!, Hot Mail or Gmail, you're already taking advantage of cloud computing. Your email Inbox, Sent, Drafts, Deleted and Contacts files are hosted on the provider's computer servers.

If you also signed up for additional services from providers such as Microsoft Messenger and Google Gmail, you might also be taking advantage of instant messaging or blogging features, also cloud-based services that make communicating with friends, family and business associates easy and efficient.

If you've ever used Skype to make phone calls or hold video conferences, this is another cloud-based service that reduces costs and makes efficient use of our time.

Software as a Service-Something Old, Something New

Though Software-as-a-Service (SaaS) has been around a number of years and is technically no more or less a form of Cloud Computing, it is also evolving into some pretty interesting opportunities for users, on both the personal and business level.

Again, public email is a great example of SaaS that we've enjoyed for a long time. However, the SaaS or Cloud Computing landscape is morphing into a new generation of capabilities. For example Microsoft Office Live, Office 365 (coming soon) and Google Docs offer web-based word processing, spreadsheets, presentation capabilities and data storage. These cloud services give us instant access to powerful document creation and management tools that are always available regardless of geography. This nascent capability is the ultimate evolution in mobility and productivity.

Cloud Computing Characteristics

Cloud computing requires searching for a cloud provider. Whether your cloud is public, private, or hybrid, look for scalability, access, interface, and usage model:

- **Scalability.** The cloud is elastic, meaning that resource allocation can get bigger or smaller depending on demand. Elasticity enables scalability, which means that the cloud can scale upward for peak demand and downward for lighter demand. Scalability also means that an application can scale when adding users and when application requirements change.
- **Self-service access.** Cloud customers can get cloud services without going through a lengthy process. All you have to do is request a specific amount of computing, storage or software from the service provider. After you use these resources, they can be automatically shut down by disconnecting from the Internet.
- **General User Interface (GUI).** Cloud services should have standardized interfaces, which provide instructions on how two application or data sources can communicate with each other. A standardized interface lets the customer more easily link cloud services together.
- **Free or Service Use Metering.** Right now there are a number of free Cloud Services for basic document preparation capabilities for example. Some targeted cloud services such as payroll or accounting software are based on a pay-as-you-go model or monthly/annual fee.

Span of Capabilities and Risks

Cloud Computing is usually classified into three categories: (1) Infrastructure as a Service (IaaS)-storage and computing resources; (2) Platform as a Service (Paas)-"black box" infrastructure that developers can build applications on top of; (3) Software as a Service (SaaS)-where a service provider hosts software service on off-site servers.

Computing on the cloud requires vigilance about risks such as security, manageability, standards, governance, and compliance:

- **Cloud security.** The same security principles that apply to on-site computing apply to cloud computing security. For example: identity management-personal identify information needed to access any computer network associated resource; detection-identifying real vs. illegitimate activity; Encryption- information asset coding to protect data.
- **Cloud manageability.** The ability to have a consistent view and management capabilities across physical and cloud-based environments. You need a consistent view across both on-premises and cloud-based environments.
- **Cloud standards.** Cloud standards ensure inter-functionality, so you can take tools, applications, virtual images and use them in another cloud environment seamlessly.
- **Cloud governance.** Governance identifies responsibility for the policies and procedures that need to be followed. Cloud governance requires governing owned infrastructure and infrastructure not owned as well.
- **Data in the cloud.** Managing data in the cloud requires data security and privacy, including controls for moving data. It also includes managing data storage and the resources for large-scale data processing.

How Cloud Computing Can Reduce Costs

Most small and medium size businesses are very interested in reducing costs where ever possible. Public or private cloud computing solutions are worth investigating. Broadly speaking, Cloud Computing can benefit your company in the following ways:

- Lower up-front investment
- Dynamic scalability
- Enrich experiences across PCs, phones and browser
- Rapid deployment
- Distributed disaster recovery scenarios
- Reputation-based technologies (technologies that come from major providers)

More specifically, public or private-based Cloud Computing can, for example, help reduce IT costs. Below are five additional ways of doing so:

The public cloud model often has the potential to deliver the most dramatic cost savings:

1. **Pay as you go.** This is perhaps the most compelling of any cloud value message. By moving applications and workloads to a public cloud platform, internal IT staff can instantly adjust resources up or down, **depending on the immediate needs of any particular workload.**
2. **Control server proliferation.** Placing workloads in the cloud means those workloads no longer require dedicated server capital investments. While the cloud isn't free, running applications cloud-based servers allows the possibility of reducing or eliminating that cost.
3. **Data center cost reductions.** Fewer servers mean a smaller data center footprint. That translates to direct savings on real estate, power, and cooling. It also translates to indirect savings on business continuity and facilities maintenance. Even though these savings extend to the private cloud model, the public cloud model offers small and medium-size businesses the possibility of eliminating the need for a data center.

But as the new shift in cloud computing expands, businesses will likely see a combination of private and public cloud models become the most popular implementation. This combination provides the most flexible IT infrastructure and has compelling costs savings of its own:

4. **Virtualization Decreases IT Costs.** Scaling infrastructure to meet new workload demands, maintaining physical security, and software deployment and patching are just a few examples of costly IT management tasks that are decreased significantly by running a virtualized infrastructure.
5. **IT as a Service Decreases IT Costs.** Private or hosted private clouds allow users to provision many IT services on their own through self-service portals. Significant savings can result on common help desk calls and other IT management tasks like procurement and server configuration.

At eMazzanti Technologies customers benefit from four powerful, immediately available, eCare Cloud Services:

1. eCare Cloud Exchange: hosted email, calendar and information collaboration
2. eCare Cloud SharePoint Services: hosted document and information collaboration services
3. MXINSPECT-cloud-based anti-spam email filtering
4. Business continuity and Disaster Recovery Service-secure, hosted off-site data backup service
- 5.

Other custom Cloud Computing solutions are possible as well and will be best determined by a qualified IT consultant.

About eMazzanti Technologies

With a company name that sounds more like a purebred, high-performance sports car than a IT support and consulting firm, eMazzanti Technologies is all about delivering powerful solutions such as cloud computing, computer network management, network troubleshooting, business continuity and disaster recovery, green computing, mobile workforce technology, information security, business information optimization in the most efficient manner possible. The Hoboken, N.J., firm is located in one of the most densely populated - and competitive - regions in the U.S. It provides business technology consulting services for companies ranging from home offices to multinational corporations throughout the New York metropolitan area and in three countries. For more information contact: Carl Mazzanti 201-360-4400 or emazzanti.net