WHAT IS CLOUD COMPUTING?

Cloud computing is a general term for anything that involves delivering hosted services over the Internet. The name cloud computing was inspired by the cloud symbol that’s often used to represent the Internet in flowcharts and diagrams.

The goal of cloud computing is to provide easy, scalable access to computing resources and IT services. Significant innovations in virtualization and distributed computing, as well as improved access to high-speed Internet and a weak economy, have accelerated interest in cloud computing.

Examples of typical services available in the cloud are divided into three categories: Infrastructure-as-a-Service (IaaS), Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS):

- Infrastructure-as-a-Service (IaaS) cloud solutions offer virtual computers, complete with IP addresses and storage. Interconnects are part of the offering; these virtual computers resemble an actual computer in every way.
- One step further is the Platform-as-a-Service (PaaS), in which the provider offers not just a virtual computer with storage and interconnectivity, but a complete package, including applications.
- A far more broad cloud is the Software-as-a-Service model (SaaS), in which the vendor not only offers the platform, but also provides a portal to the software.

Applications vary from webmail software to full featured database solutions and beyond. Companies will set up one or more of these classes of services on their resources, and sell or otherwise provide access to these services to consumers.

Cloud computing has three distinct characteristics that differentiate it from more traditional hosting models:

- Primarily, services are not owned by the consumer but are sold on demand.
- From the consumer’s point of view, the resources appear infinite, making them highly elastic -- a user can have as much or as little of a service as they want at any given time upon demand with no out-of-pocket expense for acquiring the resource physically.
- Lastly, the service belongs to and is fully managed by the provider and the consumer has no responsibilities to the physical resource.

A cloud can be private or public. Just as Internet technologies are used for intranets, a typical cloud will likely include public and private sections, both using the same technologies. There are times when it is not appropriate to migrate an organization’s data outside the organization’s firewall, dictating that at least part of the infrastructure be private in nature.

In other cases, an enterprise might already have a strong internal infrastructure, and is in the process of migrating services that make sense to the public cloud. In some arenas, core services are kept locally, and clouds are used for surge volume only. Some systems are only busy for 2 weeks at the beginning of a semester, for example, and experience very little traffic the rest of the year. A local installation capable of handling day-to-day operations would be kept locally, and a public cloud could be used to dynamically provide volume for peak seasons.

Because this pay-for-what-you-use model resembles the way electricity, fuel and water are consumed, cloud computing is sometimes referred to as utility computing. (From SearchCloudComputing.com).

What is the relationship between Cloud Computing and EdUnify?

When combined with Web services and federation, EdUnify enables cloud computing by offering the core structure that can be leveraged to build Platform-as-a-Service and Software-as-a-Service clouds.

By sharing large numbers of registered and published services and by supporting a federated security model for web services, EdUnify will encourage combinations of these services into fuller featured applications. These applications may be hosted across a number of organizations, and offered virtually as a Platform-as-a-Service or Software-as-a-Service cloud model.