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Cloud Computing Core Concepts

**Cloud Computing Basics**

Basic Concepts

* Why Cloud Computing?
  + Levels the playing field for small and medium sized businesses
  + More efficient and cost effective
  + Makes an organization more agile: able to adapt to changes in markets
* Cloud computing abilities
  + Leverage remote systems
  + Pay for only the resources you use when you need them (don’t need to buy them in advance)
  + Scale up or scale back as needed
* Cloud computing is just an evolution of technology over time, which includes the rise of timesharing and distributed computing
* Cloud computing characteristics: on-demand self-service, ubiquitous network access, resource pooling, rapid elasticity, and pay-per-use
* Delivery models: software as a service (SaaS), platform as a service (PaaS), and Infrastructure as a service (IaaS)
* Deployment models: private cloud, public cloud, hybrid cloud
* Things that are happening: cloud computing is pervasive in IT, new capabilities are being created, and lots of application/data migration.

Overview of Cloud Computing

* Professional recommendations:
  + One size does not fit all.
  + Understand the work load, and then pick the cloud deployment models.
* Cloud deployment models:
  + Private: own the hardware that the cloud runs on. This is more secure.
  + Public: leveraging cloud services over the open internet. Allows elastic scaling.
  + Hybrid: use both public and private clouds, allowing workloads to work seamlessly together. Can leverage either to meet the needs of the workload.

Types of Clouds

* Approach with an open mind; multiple clouds may be needed.
* Software as a Service (SaaS): a finished application that you rent and customize over the Internet.
  + Replaces traditional enterprise applications.
  + Salesforce is the largest provider.
  + Provides cheaper ways to consumer enterprise applications.
* Infrastructure as a Service (IaaS): services that you leverage from a local or remote resource. The infrastructure is abstracted.
  + Essentially replaces what is in your computing/data center.
  + Amazon Web Services (AWS) is the largest provider.
  + Provides cheaper platforms since the hardware/software is shared between known and unknown users.
* Platform as a Service (PaaS): platform that you leverage on demand.
  + A cloud version of app development, deployment, and hosting of apps.
  + Google App Development is a provider.
  + Provides cheaper ways to build web-based systems that enforce standards.

IaaS Clouds

* Not all are the same; understand the capabilities of each brand.
* Consider the requirements of your organization.

**Above section not done!!!**