**Cloud Computing Home Assignment #1**

**In which scenarios cloud computing should be used or not used?**

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**Scenarios where cloud computing should be used:**

**1.**[**Big data analytics**](http://www.ibm.com/big-data/us/en/%E2%80%8E)

One of the aspects offered by leveraging cloud computing is the ability to tap into vast quantities of both structured and unstructured data to harness the benefit of extracting business value.

Retailers and suppliers are now extracting information derived from consumers’ buying patterns to target their advertising and marketing campaigns to a particular segment of the population. Social networking platforms are now providing the basis for analytics on behavioral patterns that organizations are using to derive meaningful information.

**2.**[**Private cloud**](http://www.ibm.com/cloud-computing/us/en/private-cloud.html)**and**[**hybrid cloud**](http://thoughtsoncloud.com/2014/01/what-is-hybrid-cloud/)

Among the many incentives for using cloud, there are two situations where organizations are looking into ways to assess some of the applications they intend to deploy into their environment through the use of a cloud (specifically a public cloud). While in the case of test and development it may be limited in time, adopting a hybrid cloud approach allows for testing application workloads, therefore providing the comfort of an environment without the initial investment that might have been rendered useless should the workload testing fail.

Another use of hybrid cloud is also the ability to expand during periods of limited peak usage, which is often preferable to hosting a large infrastructure that might seldom be of use. An organization would seek to have the additional capacity and availability of an environment when needed on a pay-as you-go basis.

**3.** [**Infrastructure as a service (IaaS)**](http://www.ibm.com/cloud-computing/us/en/iaas.html)**and**[**platform as a service (PaaS)**](http://www.ibm.com/cloud-computing/us/en/paas.html)

When it comes to IaaS, using an existing infrastructure on a pay-per-use scheme seems to be an obvious choice for companies saving on the cost of investing to acquire, manage and maintain an IT infrastructure. There are also instances where organizations turn to PaaS for the same reasons while also seeking to increase the speed of development on a ready-to-use platform to deploy applications.

**4. Test and development**

Probably the best scenario for the use of a cloud is a test and development environment. This entails securing a budget, setting up your environment through physical assets, significant manpower and time. Then there is the installation and configuration of your platform. All this can often extend the time it takes for a project to be completed and stretch your milestones.

With cloud computing, there are now readily available environments tailored for your needs at your fingertips. This often combines, but is not limited to, automated provisioning of physical and virtualized resources.

**5. File storage**

Cloud can offer you the possibility of storing your files and accessing, storing and retrieving them from any web-enabled interface. The web services interfaces are usually simple. At any time and place you have high availability, speed, scalability and security for your environment. In this scenario, organizations are only paying for the amount of storage they are actually consuming, and do so without the worries of overseeing the daily maintenance of the storage infrastructure.

There is also the possibility to store the data either on or off premises depending on the regulatory compliance requirements. Data is stored in virtualized pools of storage hosted by a third party based on the customer specification requirements.

**6. Disaster recovery**

This is yet another benefit derived from using cloud based on the cost effectiveness of a disaster recovery (DR) solution that provides for a faster recovery from a mesh of different physical locations at a much lower cost that the traditional DR site with fixed assets, rigid procedures and a much higher cost.

**7. Backup**

Backing up data has always been a complex and time-consuming operation. This included maintaining a set of tapes or drives, manually collecting them and dispatching them to a backup facility with all the inherent problems that might happen in between the originating and the backup site. This way of ensuring a backup is performed is not immune to problems such as running out of backup media , and there is also time to load the backup devices for a restore operation, which takes time and is prone to malfunctions and human errors.

**Scenarios where cloud computing should not be used:**

1. **Custom environments:** Customized environments — which often are a source of business advantage — are impossible to replicate in more plain-vanilla cloud environments. Of course, if they do not offer business advantages, it may be worthwhile to consider a cloud move, Weinman adds.
2. **Constant demand:** If demand is relatively flat and predictable, there’s not much of a business case to be made for moving an application. A perfectly viable strategy can be to bring or keep the application in house, Weinman writes.
3. **Classic legacy:** The cost of migration is high, and “the effort to migrate [legacy] code to newer scale-out architectures and modern programming paradigms may not be worth it.”
4. **Constant capture, creation, and consumption of content:** Managing content is something that happens at the end-user level. “The cloud can’t do capture and display [of content], only edge devices can.”
5. **Close coupling of applications:** Legacy applications tend to be tightly bound to existing on-premises infrastructure, such as storage or networks — and thus may be difficult and expensive to break off.
6. **Cryptography:** The point of data encryption is to protect it *before* it goes out to the cloud. “Sending unencrypted data to the cloud for encryption would be like sending a five-year-old through the woods with a paper bag full of cash to the bank for safekeeping,” Weinman says.
7. **Compression:** Data compression offers enormous efficiencies in storage and reduced requirements for network bandwidth. It makes it cheaper to get data out to the cloud — it just doesn’t make sense to gobble up network bandwidth simply to get the data out to the cloud for later compression. “Data compression for more efficient transmission should be done at the point of origin, in the same way orange juice is concentrated near the citrus grove, not at the point of sale,” says Weinman.
8. **Caching:** The ability to temporarily store data to speed up access has been mastered quite well within on-premises systems, and it may be counter-productive to attempt to move this to the cloud. “Caching can be and is done at the edge of the network very effectively,” says Weinman. “If the cost to access remote data increases, you may want to keep the data nearby.
9. **Covert:** Don’t go to the cloud if you have trade secrets or proprietary information you don’t want anyone to see. “The legal status of your data held at the cloud provider is still uncertain,” says Weinman. “Someone worried about a secret fried chicken recipe falling into the wrong hands may want to keep it on premises.”
10. **Continuity:**  While continuity seems like a natural use case for the cloud, “the reverse is also true,” Weinman reminds us. “A local copy under your control can help avoid loss of data in the cloud, and local processing capability can ensure continuity of processing.”