**Assignment 01 – Part B**

**Backup Methodologies**

There are three types of backups: full, differential, and incremental. Since the chosen cloud vendor is MS Azure, so UVid can use the Azure Backup service to back up data to the Microsoft Azure cloud platform. We get to know that Azure Backup backs up the data, machine state, and workloads running on on-premises machines and Azure virtual machine (VM) instances. Since UVid will only be using Azure VMs, focusing on how Azure Backup works for Azure VMs does is vital.

**Backup Methodology for the Video Files (Must be able to recover videos for 30 days after they are deleted by a user in the Mo Vid web app)**

For video files, UVid can choose the differential backup method. Azure differential backup stores the blocks that changed since the initial full backup. Uses a smaller amount of network and storage and doesn't keep redundant copies of unchanged data. Although differential backup is not as efficient as increment backup, an initial full backup, daily differential backups, and a monthly full backup should to a good choice. Each full backup will be saved for a year. To recover videos for 30 days after they are deleted, UVid only needs the last full back and last differential backup to restore the file.

**Backup Methodology for the UVid SQL Data (Must be able to restore any database changes for 90 days)**

As for SQL servers’ backup types, Azure full database backup backs up the entire database. It contains all the data in a specific database or a set of file groups or files. A full backup also contains enough logs to recover that data. SQL server’s differential backup captures only the data that’s changed since the full backup. In order to restore any database changes for 90 days, using monthly full backup, daily differential backup, and saving each full backup for a year would be ideal.

**TCO of one year of costs for running the proposed cloud setup for 10 customers - Each customer will have 100 GB of videos.**

VM for Application Server

A4: 8 cores, 14GB RAM, 605GB Temporary storage

Standard HDD disk: S20: 512GiB

Monthly Cost: $372.21

VM for Wowza Streaming Engine

A4: 8 cores, 14GB RAM, 605GB Temporary storage

Standard HDD disk: S20: 512GiB 🡪 Greater than 100GB

Monthly Cost: $372.21

VM for MS SQL server

A4: 8 cores, 14GB RAM, 605GB Temporary storage

Standard HDD disk: S20: 512GiB

Monthly Cost: $372.21

VM for Video Transcoder

B16ms: 16 cores, 64GB RAM, 128GB Temporary storage

Standard HDD disk: S20: 512GiB

Monthly Cost: $601.43

Total Estimated Monthly Cost: $2068.51

10 Customers for One Year: 2068.51\*12\*10 = $248221.2