**Module 3: Essay Paper**

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IFT 320: Managing The Cloud

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**Chapter 12:** *Describe Grid Computing and why it different from Cloud Computing?*

Grid computing is a distributed computing model that connects multiple computer resources from different locations to achieve a common goal, functioning as a virtual supercomputer. These resources work together to perform complex computations, often used in scientific research, simulations, or large-scale data processing tasks. Grid computing differs from cloud computing primarily in its purpose and management. While grid computing focuses on harnessing the computational power of connected resources to complete specific tasks, cloud computing provides on-demand access to a wide range of services, including storage, processing, and software, over the internet. Cloud computing is typically managed by service providers and offers scalability, flexibility, and pay-per-use models, which make it more accessible and user-friendly for businesses compared to the collaborative and often complex nature of grid computing (Guide to Cloud Computing for Business and Technology Managers, 2015, pp. 259-280).

**Chapter 14:** *Describe the importance of Total Cost of Ownership and how to calculate it.*

Total Cost of Ownership (TCO) is a critical concept that helps organizations understand the complete cost associated with acquiring, deploying, and maintaining technology solutions over their entire lifecycle. TCO includes direct costs, such as purchase and implementation expenses, as well as indirect costs like maintenance, support, and potential downtime. Understanding TCO is crucial because it provides a more comprehensive view of the financial impact of technology investments, allowing businesses to make more informed decisions and avoid unforeseen expenses (Guide to Cloud Computing for Business and Technology Managers, 2015, pp. 283-286).

To calculate TCO, businesses must account for various factors, including initial acquisition costs (hardware, software, and infrastructure), operational costs (energy consumption, management, and maintenance), and end-of-life costs (disposal, decommissioning, or upgrading). A simple formula for TCO is:

***TCO = Initial Cost + Operational Costs + End-of-Life Costs*** (Guide to Cloud Computing for Business and Technology Managers, 2015, p. 286)***.***

**Chapter 20:** *Explain why Data in the Cloud is an important phase in a Cloud Adoption Plan and describe the 5 Data Engineering requirements for the cloud.*

Data in the Cloud is a crucial phase in a Cloud Adoption Plan because it focuses on defining the architecture for data that will be processed by cloud services. This phase ensures that data entities, along with their structure and management processes, are appropriately transformed and integrated into the cloud environment. Addressing this phase carefully helps manage risks, security, and compliance concerns, which are essential for the successful deployment of cloud services (Guide to Cloud Computing for Business and Technology Managers, 2015, p. 432).

The five key data engineering requirements for the cloud are:

1. Data Architecture: Defines the structure and organization of data within the cloud to ensure it aligns with the needs of the business.
2. Data Management: Involves the processes used to handle, store, and process data in a way that ensures quality, security, and accessibility.
3. Data Migration: Refers to the movement of data from on-premises or other environments into the cloud, requiring careful planning to minimize disruption.
4. Data Integration: Ensures that data from various sources is combined effectively within the cloud, enabling seamless access and analysis.
5. Data Governance: Establishes the policies and standards for managing data to maintain compliance, privacy, and accountability.

These requirements are critical for creating a robust data infrastructure that supports the overall cloud strategy. (Guide to Cloud Computing for Business and Technology Managers, 2015, p. 432)

# References

Guide to Cloud Computing for Business and Technology Managers. (2015). In V. Kale, *Guide to Cloud Computing for Business and Technology Managers.* Boca Raton, FL: CRC Press.