CLOUD-BASED ARCHITECTURE

PROBLEM FORMULATION

Cloud computing is the on-demand availability of computing resources (such as storage and infrastructure), as services over the internet [1]. Cloud computing offers a variety of computing resources, including storage, processing power, and networking capabilities, which users can access and utilize as needed. This model enables flexibility and scalability, allowing organizations to scale their resources up or down in real-time to meet their changing budget and needs without the need for a large upfront investment.

COMPUTE ENGINE

The user can create and run online VMs on high-performance, reliable cloud infrastructure, without owning the hardware.

CLOUD STORAGE

Cloud Storage is often used for storing training data, models, and checkpoints for machine learning projects in Cloud Storage buckets. Access files from anywhere.

BIG QUERY

A multi-engine, multi-format, and multi-cloud service where BigQuery to manage all data types across clouds, structured and unstructured, with fine grained access controls.

CLOUD SQL

Fully managed relational database service for MySQL, PostgreSQL, and SQL Server. It manages databases and automates backups, replication, patches, encryption, and storage capacity increases.

CLOUD CDN

The user can create and run online VMs on high-performance, reliable cloud infrastructure, without owning the hardware.

Figures by Google [1]

CAREERS

$75,000 TO $289,000

Salary Range of a Cloud Architect [2]

Entry-level: $95,691
Mid-level: $100,322–$111,941
Senior-level: $122,238–$135,309 [2]

MOST INTERSTING

The thing I found most interesting upon my research was that Service Oriented Architecture changes the way that a product is developed. It breaks down software into services that perform a specific function which can interact with each other, making the program easier to scale, change, and understand. It allows easier adaptation to the evolving needs of users and stakeholders.

CRITICAL ANALYSIS

As wireless communications technology is evolves, additional research on emerging network architectures is becoming timely to understand the applicability of both traditional and novel networking solutions. Cloud computing techniques can be used to construct system prototypes and demonstrators within the rapidly maturing heterogeneous wireless ecosystem [3].

Service-oriented is a method which refers to the establishment of abstract principles of service-oriented programming. Cloud service based on the service-oriented architecture (SOA) can construct a flexible, reusable, interoperable with integrated interface for internal and external communication of the cloud service [4].

Collaboration technologies play a crucial role in facilitating communication and teamwork in both professional and personal settings. Email, chat, and messaging are well known and widely used types of collaboration software. Some underutilized technologies such as virtualization, federation, and automation are gaining use in the IT space [5].

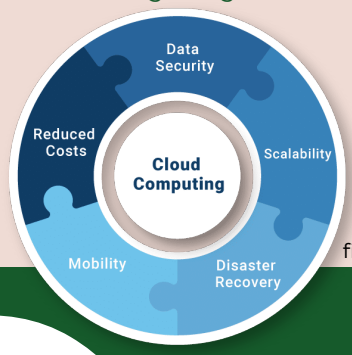

figure by cuelogic.com

EVALUATION

The literature provides valuable insights into the current trends and technologies shaping the landscape of networking and computing infrastructure. Recent development in network architectures, cloud computing, and wireless communication technologies, coupled with the increasing demand for scalable and flexible computing resources, highlights the importance of exploring emerging network designs and implementing cloud-based solutions. Cloud computing has the power to transform the way developers interact, enabling agility and innovation at scale.

Service-oriented architecture (SOA) has an impact on building systems that adapt and thrive in the ever-changing landscape of technology. Adopting an SOA approach not only fosters modularity and reusability but also promotes interoperability, making collaboration between different systems and services possible, opening up a world of possibilities for innovation and integration. SOA can streamline the development and maintenance of complex software systems.

Collaboration technologies can help with navigating remote work environments and distributed teams. While the foundational role of traditional collaboration tools like email and chat remains important, leveraging advanced technologies such as virtualization, federation, and automation can enable developers to achieve greater efficiency and synergy in their efforts.

Figure by VectorStock

Figure by clipground.com

LITERATURE SEARCH

[3] Sen, Jaydip. Cloud Computing - Architecture and Applications. S.l: IntechOpen, 2017. Print.
Raj, Pethuru. Cloud Enterprise Architecture. Hoboken: CRC Press, 2012. Print.
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[2] How to become a cloud architect: Degrees, skills, jobs, courses. Coursera. (n.d.). https://www.coursera.org/articles/how-to-become-a-cloud-architect