

cloud-2.1-cloud-computing assignment

The computing model

- Hybrid Cloud computing
 - Private & Public clouds – global, centralized
 - Some applications and their data like payments, inventory, order mgmt, etc will be on the global private cloud and some applications like the public-facing websites, partners API, etc and their data may be on the global/local public cloud.
 - Private cloud – local by countries/regions
 - Customer sensitive data as well any data that needs to be stored locally in the country of business for reason of local data laws, these shall be kept in private clouds.
 - Improved latency performance of websites and content to be closer to customers' locations

Benefits and limitations of each model

Feature	Traditional Computing	Cloud Computing	Hybrid Cloud Computing
Cost	<ul style="list-style-type: none">- High Initial Cost: Significant upfront investment in hardware and infrastructure.- Maintenance: Ongoing costs for upgrades, maintenance, and staffing.	<ul style="list-style-type: none">- Low Initial Cost: Minimal upfront investment.- Operational Cost: Pay-as-you-go model reduces expenses and optimizes cost based on usage.	<ul style="list-style-type: none">- Balanced Cost: Initial investment for critical infrastructure.- Efficient Spending: Combines cost savings from cloud resources with on-premises investments.- Cost Efficiency: Public clouds offer cost-effective solutions for handling spikes in traffic without the need to maintain excess infrastructure year-round. This helps ecommerce businesses manage costs effectively.
Scalability	<ul style="list-style-type: none">- Limited: Scaling requires physical additions, leading to high costs and long lead times.	<ul style="list-style-type: none">- Highly Scalable: Resources can be scaled up or down quickly and efficiently based on demand- Elasticity: Ideal for handling variable workloads.	<ul style="list-style-type: none">- Flexible Scalability: Combines scalable cloud resources with stable on-premises infrastructure.- Optimized Scaling: Allows for selective scaling of specific components.- Scalability and Flexibility: Ecommerce websites experience varying levels of traffic throughout the year (e.g., holidays, promotions). A hybrid cloud allows them to scale resources dynamically. They can use public cloud resources during peak times to handle increased traffic and revert to private cloud or on-premises resources during regular periods.

Benefits and limitations of each model

Feature	Traditional Computing	Cloud Computing	Hybrid Cloud Computing
Security	<ul style="list-style-type: none">- High Control: Complete control over security measures.- Potential Risks: Requires significant resources to maintain and update security.- Higher Cost: Having to install and maintain multiple data storage locations and the underlying data centre infrastructures well as the supporting local IT resources.	<ul style="list-style-type: none">- Strong Security: Robust security measures by cloud providers.- Shared Environment: Potential risks due to multi-tenancy and shared resources.	<ul style="list-style-type: none">- Customizable Security: Integrates strengths of both cloud and on-premises solutions.- Data Compliance: Sensitive data can remain on-premises or in a private cloud.- Security and Compliance: Ecommerce websites deal with sensitive customer data (payment information, personal details). A hybrid cloud allows them to keep critical data on private cloud or on-premises servers, ensuring compliance with data protection regulations while using public cloud for less sensitive operations.
Flexibility	<ul style="list-style-type: none">- Limited: Dependent on internal capabilities, making it difficult to adapt quickly to changing needs.	<ul style="list-style-type: none">- Highly Flexible: Resources can be easily adjusted and reallocated based on changing requirements.- Rapid Deployment: Quick deployment of new applications and services.	<ul style="list-style-type: none">- Integrated Flexibility: Combines the best of both environments, enabling innovative deployments while maintaining control over critical operations.- Seamless Integration: Dynamic resource allocation.