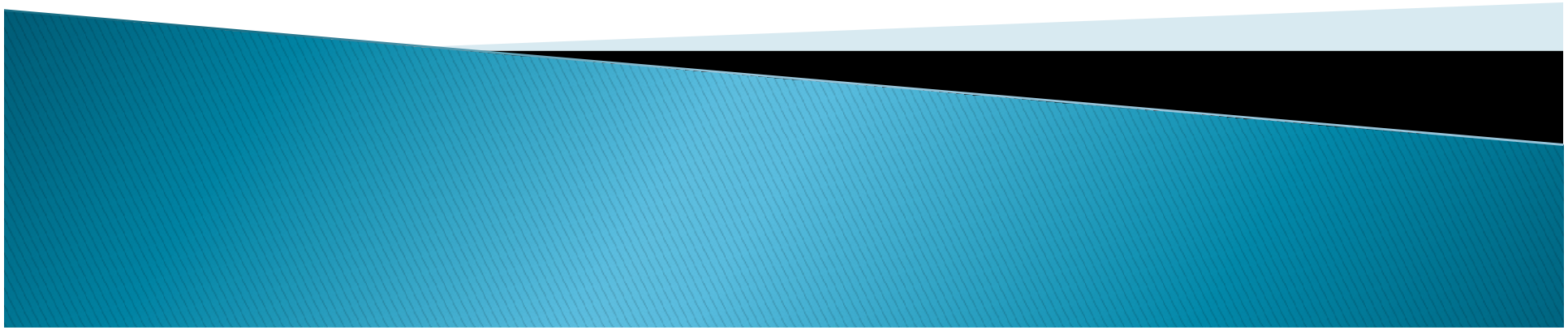
# Cloud Computing Concepts and Scenario based Case Studies



# Scenario 1:

Consider a scenario,

A server has the usual capacity to handle 10000 Request/Second. In Peak time it has a peak load with increment of 1000% in the requests as usual. Server has multiprocessor and multi core systems and each core is capable of handling 1250Req/Seconds.

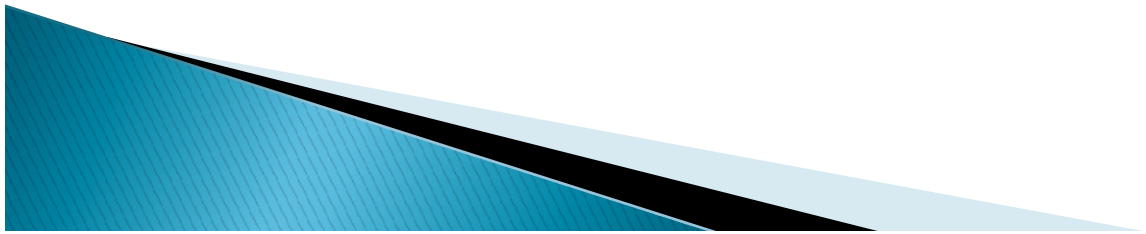
1. How many Cores are required to handle usual and peak time requests?
2. How many hexacore processors will be required to handle such traffic.

# Scenario 2:

Scalability and Load Balancing*

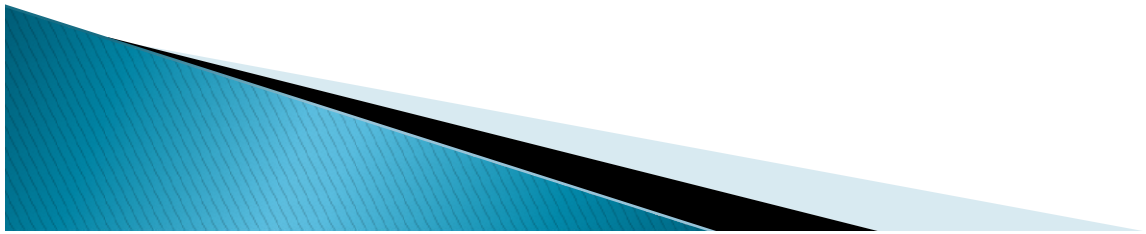
Question:

A popular e-commerce website experiences a sudden surge in traffic during a flash sale, causing their servers to slow down. How can cloud computing help address this issue?



Solution:

The e-commerce website could utilize cloud services to implement auto-scaling. This would involve setting up the infrastructure to automatically spin up additional server instances when traffic increases and spin them down when traffic decreases. Additionally, load balancers could be employed to evenly distribute incoming traffic across these instances, ensuring optimal performance.

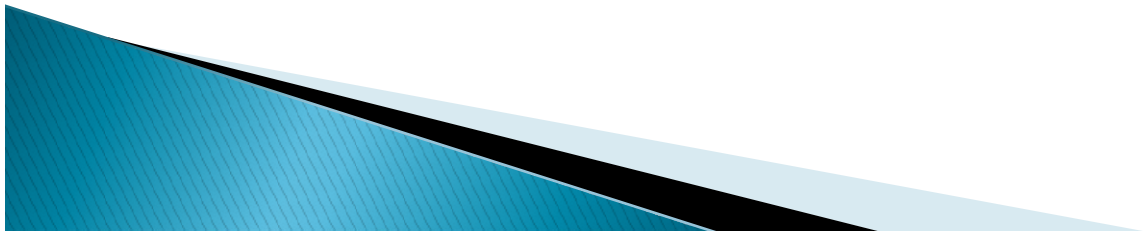


# Scenario 3:

## Data Security

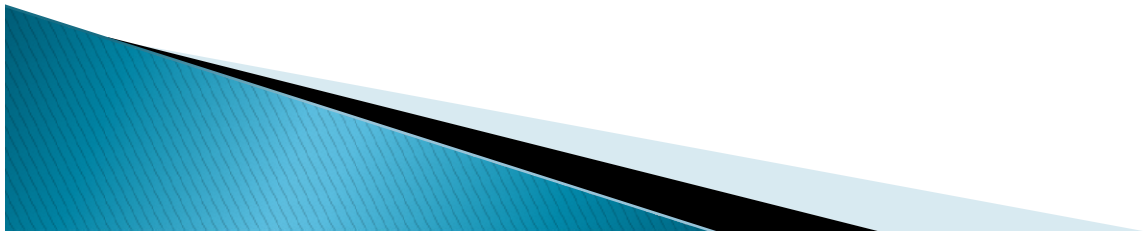
Question:

A financial institution is concerned about storing sensitive customer data in the cloud. How can they ensure data security?



Solution:

The institution should implement strong encryption for data both in transit and at rest. They could choose a cloud provider that offers advanced encryption options and follows compliance standards. Multi-factor authentication, regular security audits, and access controls can also be implemented to enhance data security.

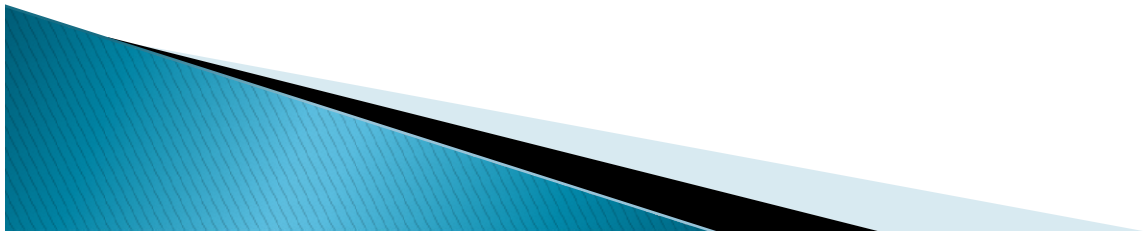


# Scenario 4:

Disaster Recovery

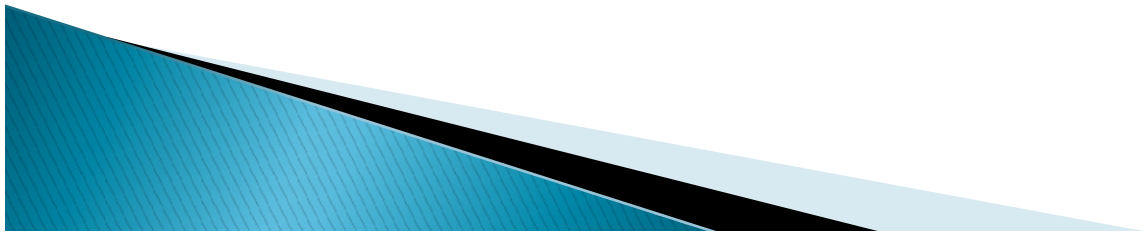
Question:

A small business wants to ensure their critical applications and data are protected in case of a server failure. How can cloud computing assist in disaster recovery?



Solution:

The business can set up a backup and disaster recovery strategy using cloud services. They could regularly back up their applications and data to the cloud, allowing for quick recovery in case of hardware failures or other disasters. Virtual machine snapshots and off-site replication could help restore the systems to a functional state.

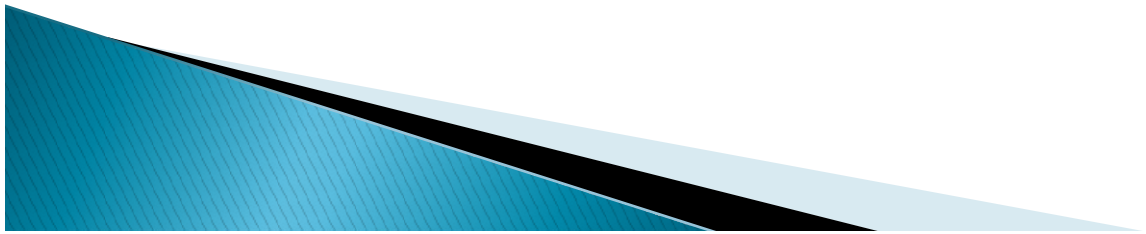


# Scenario 5:

Cost Optimization

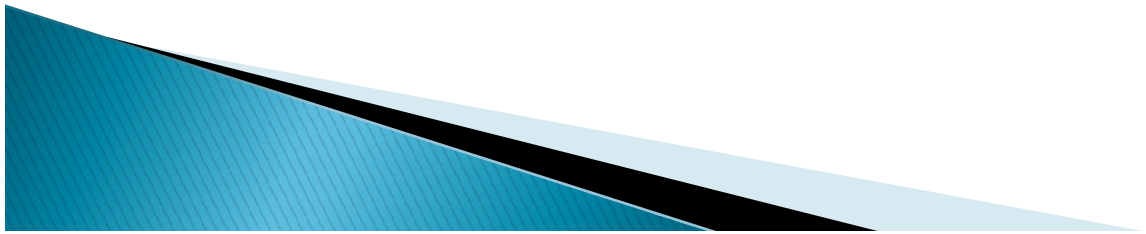
Question:

A startup wants to minimize its IT infrastructure costs while ensuring reliable performance. How can cloud computing help the startup achieve this?



Solution:

Cloud computing offers a pay-as-you-go model, allowing the startup to only pay for the resources they use. They can scale up or down as needed, avoiding the upfront costs of purchasing and maintaining physical hardware. By leveraging cloud provider's monitoring tools, the startup can optimize resource usage, identify cost-saving opportunities, and streamline their budget.

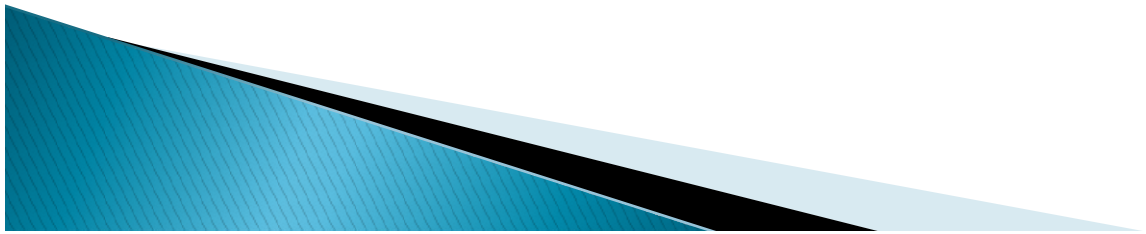


# Scenario 6:

Global Availability

Question:

A multinational company wants to host its application so that users around the world experience low latency. How can cloud computing provide a solution?



Solution:

The company can use a cloud provider's global network of data centers to host their application in multiple geographic regions. This enables them to serve users from data centers closest to their location, reducing latency. Content delivery networks (CDNs) can further enhance performance by caching and distributing content to edge locations.

Remember, these solutions are brief overviews. Each scenario can have more intricate details and implementation steps. If you need further elaboration or have more specific questions, feel free to ask!