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Elasticity

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Synonyms

[Database-as-a-Service](#); [Elastic databases](#); [Scalability](#)

Definition

Elasticity is a property of distributed databases that expand or contract the use of physical resources (e.g., servers) in response to workload requirements. While similar to scalability, the ability for a system to expand for additional capacity, the notion of elasticity often differs in several ways. Scalable systems can add more resources to either speed up existing workloads or increase performance with a larger data set size. In contrast, elasticity focuses on extending scalable systems to be self-managed and online. For example, a scalable system can be brought offline by an administrator to increase the number of servers, whereas an elastic database would seek to add servers without manual intervention

or stopping client requests. Additionally, elasticity explicitly considers the online contraction of resources when the system is over-provisioned. Supporting elasticity requires the ability to monitor workloads, model resource requirements, and physically reconfigure data partitioning. Replication and load balancing are often used in conjunction with elasticity.

Cross-References

- [Cloud Computing](#)
- [Data Partitioning](#)
- [Multitenancy](#)
- [Replication for Scalability](#)

References

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