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Cloud service models: Features and framework

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Abstract

Cloud computing has revolutionized the way businesses access and utilize computational resources, providing unparalleled cost efficiency, scalability, and flexibility. Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) comprise the three primary cloud service models; this chapter offers a thorough examination of each. We explore the characteristics, use cases, advantages, and disadvantages of each model, emphasizing the varying degrees of control and responsibility that cloud providers and consumers share. In addition, the chapter delves into significant future trends, such as the increased integration of Artificial Intelligence functionalities, the paramount importance of robust cloud security measures, the convergence of edge and cloud computing, advancements in resource optimization, and the increasing adoption of cloud- native and serverless architectures. It is imperative for organizations to comprehend these models and emergent trends in order to effectively leverage the transformative power of the evolving cloud landscape. © 2026 by IGI Global Scientific Publishing. All rights reserved.

Indexed keywords

Engineering controlled terms

Artificial intelligence; Cloud platforms; Cloud security; Distributed cloud; Distributed database systems

Engineering uncontrolled terms

Cloud consumers; Cloud service models; Cloud-computing; Computational resources; Cost-efficiency; Degree of control; Efficiency scalability; Modeling features; Modelling framework; Software-as-a- Service (SaaS)

Engineering main heading

Platform as a Service (PaaS)

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