Exploring Cloud Computing

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Abstract: *Cloud computing has reached maturity since Amazon introduced the pioneering cloud services in 2006. Hong Kong, with its vast daily data processing needs across various sectors, is poised to embrace cloud services extensively, despite a gradual uptake initially. Cloud computing now dominates research agendas in computer science due to its profound implications across multiple computing sectors, particularly in managing big data, where it's indispensable. The establishment of a major cloud R&D centre in Hong Kong by Lenovo in January 2015 underscores this trend.*

Cloud computing, fulfilling the long-standing vision of computing as a utility, possesses the capability to revolutionize a significant portion of the IT industry. It enhances the attractiveness of software as a service and influences the design and procurement of IT hardware. For developers with innovative ideas for new Internet services, the need for substantial capital investment in hardware deployment or ongoing operational expenses is eliminated. Concerns about overprovisioning, which wastes resources, or under provisioning, which can lead to missed opportunities, are alleviated. Additionally, companies with extensive batch-oriented tasks can achieve results at unprecedented speeds, as the scalability of programs allows for efficient utilization of resources without incurring additional costs. This elasticity of resources, where utilizing 1,000 servers for one hour costs the same as using one server for 1,000 hours, represents a significant departure from traditional IT models.

Keywords: Cloud computing, Amazon Web Services (AWS), Data processing, big data

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