Foreword

In this new era of Cloud Computing, we are currently facing a number of major challenges in the architectural design and implementation of Enterprise Cloud systems and services. These challenges include: the reference architecture of cloud computing, cloud models for enterprises, the methodologies to build cloud systems, the best practices of architectural and industrial patterns, risk and security management of cloud systems and services, service management and migration of applications to the cloud.

This handbook provides detailed studies of cloud computing and explores every aspect and component involved in the design and implementation of the cloud computing system - including system models, methodologies and patterns, workload placement, data storage, security and compliance. The handbook also provides perspectives into the designing and implementing service management functions, integration models and the use of brokerage services over clouds.

Security and risk control in cloud computing are always a major concern for enterprises. Despite a rocky start in terms of perceived security, cloud adoption continues to grow because users see the benefits of the cloud as greater than the risk. Although enterprise users are becoming more comfortable with the notion that cloud can be secure, there is still a lack of understanding of how to secure a cloud environment and how to demonstrate compliance of these cloud environment for regulatory purposes. This handbook covers a number of security, risk controls and governance topics. It also provides insight into the recent research and industrial practices as to how security control and risk mitigation can be designed and implemented for cloud environments and services.

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