Introduction

Information storage is a central pillar of information technology. A large quantity of digital information is being created every moment by individual and corporate consumers of IT. This information needs to be stored, protected, optimized, and managed.

Not long ago, information storage was seen as only a bunch of disks or tapes attached to the back of the computer to store data. Even today, only those in the storage industry understand the critical role that information storage technology plays in the availability, performance, integration, and optimization of the entire IT infrastructure. Over the last two decades, information storage has developed into a highly sophisticated technology, providing a variety of solutions for storing, managing, connecting, protecting, securing, sharing, and optimizing digital information.

With the exponential growth of information and the development of sophisticated products and solutions, there is also a growing need for information storage professionals. IT managers are challenged by the ongoing task of employing and developing highly skilled information storage professionals.

Many leading universities and colleges have started to include storage technology courses in their regular computer technology or information technology curriculum, yet many of today's IT professionals, even those with years of experience, have not benefited from this formal education, therefore many seasoned professionals—including application, systems, database, and network administrators—do not share a common foundation about how storage technology affects their areas of expertise.

This book is designed and developed to enable professionals and students to achieve a comprehensive understanding of all segments of storage technology. While the product examples used in the book are from EMC Corporation, an

understanding of the technology concepts and principles prepare the reader to easily understand products from various technology vendors.

This book has 16 chapters, organized in four sections. Advanced topics build upon the topics learned in previous chapters.

Part 1, "Information Storage and Management for Today's World": These four chapters cover information growth and challenges, define a storage system and its environment, review the evolution of storage technology, and introduce intelligent storage systems.

Part 2, "Storage Options and Protocols": These six chapters cover the SCSI and Fibre channel architecture, direct-attached storage (DAS), storage area networks (SANs), network-attached storage (NAS), Internet Protocol SAN (IP-SAN), content-addressed storage (CAS), and storage virtualization.

Part 3, "Business Continuity and Replication": These four chapters introduce business continuity, backup and recovery, local data replication, and remote data replication.

Part 4, "Security and Administration": These two chapters cover storage security and storage infrastructure monitoring and management.

This book has a supplementary website that provides additional up-to-date learning aids and reading material. Visit `http://education.EMC.com/ismbook` for details.

EMC Academic Alliance

Universities and colleges interested in offering an *information storage and management* curriculum are invited to join the Academic Alliance program. This program provides comprehensive support to institutes, including teaching aids, faculty guides, student projects, and more. Please visit `http://education.EMC.com/academicalliance`.

EMC Proven Professional Certification

This book prepares students and professionals to take the EMC Proven Professional Information Storage and Management exam E20-001. EMC Proven Professional is the premier certification program that validates your knowledge and helps establish your credibility in the information technology industry. For more information on certification as well as to access practice exams, visit `http://education.EMC.com`.