INFORMATION STORAGE AND MANAGEMENT (ISM)

COURSE OVERVIEW

Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure, including virtual environments. It provides comprehensive learning of storage technology, which will enable you to make more informed decisions in an increasingly complex IT environment. ISM builds a strong understanding of underlying storage technologies and prepares you to learn advanced concepts, technologies, and products. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, IP-SAN, NAS, Object-based and unified storage; business continuity solutions such as backup, replication, and archive; the increasingly critical area of information security; and the emerging field of cloud computing. This unique, open course focuses on concepts and principles which are further illustrated and reinforced with EMC examples.

SECTION1: STORAGE SYSTEM

Chapter 1: Introduction to Information Storage
This chapter introduces evolution of storage architecture, key data center elements, virtualization, and cloud computing.

Chapter 2: Data center environment
This chapter details key data center elements – Host (or compute), connectivity, storage, and application in both classic and virtual environments. It also focuses on components, addressing scheme, and performance of mechanical and solid-state drives. This chapter also introduces host access to storage via direct attached and network-based options.

Chapter 3: RAID
This chapter focuses on RAID implementations, techniques, and levels along with the impact of RAID on application performance.

Chapter 4: Intelligent Storage system
This chapter details components of intelligent storage systems. It also covers virtual storage provisioning and intelligent storage system implementations.

SECTION 2: STORAGE NETWORKING TECHNOLOGIES

Chapter 5: Fibre Channel Storage Area Network (FC SAN)
This chapter focuses on FC SAN components, connectivity options, and topologies including access protection mechanism 'zoning'. It also elaborates on FC protocol stack, addressing, and other fabric services. SAN-based virtualization and VSAN technology is also covered here.

Chapter 6: IP SAN and Fibre Channel over Ethernet (FCoE)
This chapter covers iSCSI and FCIP protocols for storage access over IP network. Converged protocol FCoE and its components are also detailed.

Chapter 7: Network Attached Storage (NAS)
This chapter focuses on file sharing technology using NAS and covers its benefits, components, and implementations. File level storage virtualization is also discussed.

Chapter 8: Object based and Unified Storage
This chapter focuses on emerging areas of object-based storage and unified storage solutions. Content addressed storage (CAS) as an implementation of object-based solution is also covered.

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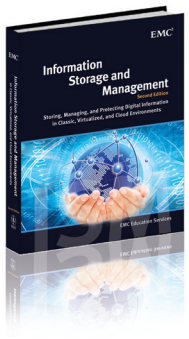
ISM Book - Second Edition



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http://education.EMC.com/ISMbookv2

SECTION 3: BACKUP. REPLICATION AND ARCHIVE

Chapter 9: Introduction to Business Continuity
This chapter focuses on information availability and business continuity solutions in both virtualized and non-virtualized environments.

Chapter 10: Backup and Archive
This chapter focuses on backup and recovery in both virtualized and non-virtualized environments.
It also covers deduplication technology to optimize data backups along with archival solutions to address the fixed content storage requirements.

Chapter 11: Local Replication
This chapter focuses on local replication of data along with data restore and restart considerations.

Chapter 12: Remote Replication
This chapter focuses on remote replication technologies in virtualized and non-virtualized environments.
It also covers three-site replication and continuous data replication options.

SECTION 4: CLOUD COMPUTING

Chapter 13: Cloud Computing
This chapter focuses on cloud computing, its benefits, characteristics, deployment models, and services. It also covers cloud challenges and migration considerations.

SECTION 5: SECURING AND MANAGING STORAGE INFRASTRUCTURE

Chapter 14: Securing the Information Infrastructure
This chapter focuses on framework and domains of storage security along with covering security implementation at storage networking. It also covers security in virtualized and cloud environments.

Chapter 15: Managing the Information Infrastructure
This chapter focuses on storage infrastructure monitoring and management. It covers storage tiering, information lifecycle management (ILM), and cloud service management activities.

Student profile for success

Students who have completed courses on the following topics will have an added advantage in comprehending the content of the ISM course.

1. Computer systems and architectures
2. Networking technologies
3. Operating system
4. Database Management Systems

The knowledge you gain through the Information Storage and Management (ISM) 'open' course can be applied to impact business decisions in a variety of ways

	Key activities	Business Impact
1	Explain the decisive role of information storage and management to the business.	Motivate business stakeholders and IT teams on the critical role of 'information' infrastructure. Business can strategically gain competitive advantage by successfully managing the rapid growth of information.
2	Understand key components of classic and virtualized information infrastructure and their requirements.	Establish effective and efficient information storage and management infrastructure, which can play a critical role for the success of business.
3	Explain intelligent storage systems architecture and working principles.	Understanding various physical and logical components of storage subsystems and their behavior is critical for successful design of information infrastructure.
4	Explain storage provisioning and RAID level implementations based on application requirements.	Efficient storage provisioning and RAID implementation to meet applications capacity, availability, and performance requirements guarantee high returns from the information infrastructure.
5	Differentiate and deploy various storage networking solutions based on application requirements.	With the globalization of business, data centers need to provide services 24x7x365 to a variety of business applications and users. Implementing the correct storage networking option such as FC SAN, IP SAN, NAS, and unified storage solution is the most crucial part of meeting customers' requirements.
6	Discuss FC SAN and IP SAN deployments for applications accessing storage using block level requests.	Knowledge of essential components, protocols, and topologies enable IT teams and administrators to deploy, consolidate, and run a storage area network (SAN) that meets service levels required by applications.
7	Discuss NAS deployment for file and data sharing for a collaborative development environment of organizations.	Organizations need file sharing environments for sharing of data among different users and platforms. Understanding of NAS components, operations, and implementation helps to deploy suitable file sharing infrastructure within the organization.
8	Perform high-level business continuity planning and decide on a suitable strategy to meet information availability needs.	Business continuity enables reduced downtime and performance impact on business applications. Having an appropriate business continuity strategy and solution helps business to mitigate loss of millions of dollars and reputation in the market.
9	Discuss backup, recovery, and archival requirements and solutions for business- critical data.	Shrinking backup windows, faster recovery requirements, and longer retention of data to meet business and regulatory requirements drive optimization of backups using deduplication and proper archival strategy.
10	Explain various replication solutions to meet different business continuity needs.	Formulate and deploy necessary local and remote replication solutions to ensure business continuity during anticipated/unforeseen disasters.
11	Discuss benefits of cloud computing and deploy effective cloud computing deployment model and service offerings for businesses /IT organizations.	Needs and benefits of cloud computing must be clear and consistent to the business and IT. Depending on the business requirement, IT teams must propose a balanced approach in terms of various deployment models (private, public, and hybrid) and services offerings (SaaS, PaaS, and IaaS).
12	Understand and address security concerns and solution for information infrastructure.	Security is a prominent concern in IT overall. Further virtualization and cloud computing introduces unique security challenges that need to be identified and addressed.
13	Perform monitoring and management of information infrastructure.	Managing infrastructure is key to achieving business goals and service levels.

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