Information Storage and Management v.3

40 HORAS

OVERVIEW

Information Storage and Management (ISM) is a unique course that provides a comprehensive understanding of the various storage infrastructure components in data center environments. It enables participants to make informed decisions on storage-related technologies in an increasingly complex IT environment, which is fast changing with the adoption of software-defined infrastructure management and third platform technologies (cloud, Big Data, social, and mobile technologies). It provides a strong understanding of storage technologies and prepares participants for advanced concepts, technologies, and processes. Participants will learn the architectures, features, and benefits of intelligent storage systems including block-based, file-based, object-based, and unified storage; software-defined storage; storage networking technologies such as FC SAN, IP SAN, and FCoE SAN; business continuity solutions such as backup and replication; the highly-critical area of information security; and storage infrastructure management. This course takes an open-approach to describe all the concepts and technologies, which are further illustrated and reinforced with EMC-related product examples.

AUDIENCE

- Experienced IT professionals, who may not have had exposure to all of the segments of modern storage infrastructure
- Experienced IT professionals managing storage infrastructure and services
- Students and professionals who are looking to pursue a career in the storage industry
- Organization-wide IT teams directly or indirectly responsible for planning, designing, deploying, managing, or leveraging information infrastructure
- Individuals who are seeking EMC Proven Professional Information Storage Associate (EMCISA) certification

PREREQUISITE KNOWLEDGE/SKILLS

- To understand the content and successfully complete this course, a participant must have a basic understanding of computer architecture, operating systems, networking, and databases
- Participants with experience in specific segments of storage infrastructure would also be able to assimilate the course material

COURSE OBJECTIVES

Upon successful completion of this course, participants should be able to:

- Describe data center infrastructure and its elements
- Describe third platform technologies - cloud, big data, social, and mobile
- Evaluate various types of intelligent storage systems and their deployment
- Describe software-defined storage
- Evaluate various storage networking technologies and their deployment
- Articulate business continuity and archiving solutions
- Describe various security threats and controls in a storage infrastructure
- Describe key processes for managing a storage infrastructure

COURSE OUTLINE

Module 1: Introduction to Information Storage

- Digital data and its types
- Information storage
- Key characteristics of data center
- Evolution of computing platforms

Module 2: Third Platform Technologies

- Cloud computing and its essential characteristics
- Cloud services and cloud deployment models
- Big data analytics
- Social networking and mobile computing
- Characteristics of third platform infrastructure
- Imperatives for third platform transformation

Module 3: Data Center Environment

- Building blocks of a data center
- Compute systems and compute virtualization
- Software-defined data center

Module 4: Intelligent Storage Systems

- Components of an intelligent storage system
- Components, addressing, and performance of hard disk drives and solid state drives
- RAID
- Types of intelligent storage systems
- Scale-up and scale-out storage architecture

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Module 5: Block-based Storage System
- Components of block-based storage system
- Storage provisioning and storage tiering

Module 6: File-based Storage System
- Components and architecture of NAS
- NAS file sharing methods
- File-level virtualization and tiering

Module 7: Object-based and Unified Storage
- Components of object-based storage device (OSD)
- Key features of OSD
- Storage and retrieval process in OSD system
- Unified storage architecture

Module 8: Software-defined Storage
- Attributes of software-defined storage
- Architecture of software-defined storage
- Functions of the control plane
- Software-defined storage extensibility

Module 9: Fibre Channel SAN
- Software-defined networking
- FC SAN components and architecture
- FC SAN topologies, link aggregation, and zoning
- Virtualization in FC SAN environment

Module 10: Internet Protocol SAN
- iSCSI protocol, network components, and connectivity
- Link aggregation, switch aggregation, and VLAN
- FCIP protocol, connectivity, and configuration

Module 11: Fibre Channel over Ethernet SAN
- Components of FCoE SAN
- FCoE SAN connectivity
- Converged Enhanced Ethernet
- FCoE architecture

Module 12: Introduction to Business Continuity
- Impact of information unavailability
- Business continuity planning lifecycle
- Eliminating single points of failure
- Application resiliency

Module 13: Backup and Archive
- Backup architecture
- Backup targets and methods
- Data deduplication
- Cloud-based and mobile device backup
- Data archive

Module 14: Replication
- Uses of replication and its characteristics
- Compute-based, storage-based, and network-based replication
- Data migration
- Disaster Recovery as a Service (DRaaS)

Module 15: Securing the Storage Infrastructure
- Information security goals
- Storage security domains
- Threats to a storage infrastructure
- Security controls to protect a storage infrastructure
- Governance, risk, and compliance

Module 16: Managing the Storage Infrastructure
- Storage infrastructure management functions
- Storage infrastructure management processes