INFORMATION STORAGE AND MANAGEMENT (ISM) v3

COURSE 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. The latest iteration of this popular course — ISM v3 (version 3) — enables participants to make informed decisions on storage-related technologies in increasingly complex IT environments, which are fast changing with the adoption of software-defined infrastructure management and third platform technologies (cloud, Big Data, social, and mobile technologies).

ISMv3 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 outlined the course module section below.

The ISMv3 course takes an open-approach to describe all the concepts and technologies, which are further illustrated and reinforced with EMC-related product examples.

COURSE MODULES:

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 Infrastructure

- 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

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

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 v3 course.

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

The knowledge you gain through the ISM v3 'open' course can be applied to impact business decisions in a variety of ways

Key activities	Business Impact
1 Motivate business stakeholders and IT teams to recognize the critical role of 'information' infrastructure.	Depending on your choice of storage infrastructure components, you may enhance or degrade your company's existing IT infrastructure performance and availability.
2 Differentiate, select, and deploy various storage networking solutions based on application requirements.	Storage networks are required to support the performance, scalability, collaboration, and long-distance interconnectivity requirements of applications. Implementing the correct storage networking option such as FC SAN, IP SAN, and FCoE SAN is crucial to meeting customer requirements.
3 Immediately contribute to planning and deploying software-defined data centers with existing proprietary or commodity hardware.	Transitioning to third platform requires data centers to support automated, policy-driven, agile, and simplified management operations. Software-Defined infrastructure is critical for managing third platform applications.
4 Discuss backup, recovery, and archival requirements and solutions for business-critical data.	Prolong or enhance the utilization of existing backup topologies, target devices, and storage capacities by combining different techniques, including, but not limited to, deduplication and proper archival strategy.
5 Identify storage security threats and set appropriate controls in place.	Identifying security threats on a storage infrastructure will help strengthen the overall security plan and deploy appropriate security controls at the compute, storage, and network levels.
6 Discover, monitor, and report information in real-time pertaining to storage infrastructure and implement third platform-centric processes to support on-going management operations.	Traditional management challenges can be addressed by practicing third platform-centric management characterized by a service-focused approach that is software defined infrastructure-aware and provides end-to-end visibility and orchestrated operations.

EMC Corporation
Hopkinton, Massachusetts 01748-9103
1-508-435-1000 In North America 1-866-464-7381
www.EMC.com

EMC², EMC, EMC Proven, and the EMC logo are registered trademarks or trademarks of EMC Corporation in the United States and other countries.
All other trademarks used herein are the property of their respective owners. © Copyright 2015 EMC Corporation. All rights reserved. Published in the USA. 12/15

EMC²