

Course Code: SSFS3G

Course Title: IBM FlashSystem V9000 Storage Implementation

## Description:

IBM FlashSystem V9000 is a comprehensive all-flash enterprise storage solution that delivers the full capabilities of IBM FlashCore technology. FlashSystem V9000 offers a rich set of storage virtualization features designed to improve efficiency, management, scalability and flexibility for any storage environments. FlashSystem V9000 delivers industry-leading value to enterprises along three dimensions: Scalable Performance, Enduring Economics, and Agile Integration.

This course focuses on the planning and implementation tasks associated with integrating the FlashSystem V9000 into the storage area network, and facilitate storage application data access independence from storage management functions and requirements.

It also explains how to:

- Centralize storage provisioning to host servers from common storage pools using internal storage and SAN attached external heterogeneous storage.
- Improve storage utilization effectiveness using Thin Provisioning and Real-Time Compression
- Implement storage tiering and optimization of flash, enterprise or nearline systems usage with Easy Tier.
- Facilitate the coexistence and migration of data from non-virtualization to the virtualized environment.
- Utilize network-level storage subsystem-independent data replication services to satisfy backup and disaster recovery requirements.

## Objectives:

After completing this course, you should be able to:

- Summarize the units associated with this course.
- Recall the history and fundamentals for IBM FlashSystem storage.
- Distinguish the core principles of the IBM FlashCore Technology.
- Classify the characteristics and components of the IBM FlashSystem V9000 storage system.
- Outline the physical and logical planning requirements to setup and configure a FlashSystem system environment.
- Summarize the symmetric virtualization process converting IBM MicroLatency modules to storage resources.
- Recall the process to create host access storage on the IBM FlashSystem V9000.
- Determine the advanced software features designed to simplify data management, improve data security, and preserve storage investments.
- Interpret the process in which to migrate data to and from the virtualized FlashSystem V9000 system environment.
- Recall the administrative functions and maintenance procedures to centralize the management and servicing of IBM FlashSystem V9000 storage resources.

## Prerequisites:

- An understanding of the basic concepts of open systems disk storage system and I/O operations - we recommend the following:
- Foundations of Storage (SS00DG) or
- Introduction to Storage (SS01G) and
- IBM Flash Storage Fundamentals (SSFS1G / SSFS1WG)

## Duration:

32 Hrs

## Topics:

### Day 1

Welcome  
Unit 1: IBM FlashSystem V9000 Introduction  
Unit 2: Emergence of flash storage  
Unit 3: IBM FlashCore technology  
Unit 4: IBM FlashSystem V9000 hardware architecture  
Unit 5: FlashSystem V9000 installation and configuration  
Unit 6: IBM Spectrum Virtualize RAID protection  
Exercise 0: Lab environment overview  
Exercise 1: System user authentication  
Exercise 2: Provisioning internal storage

### Day 2

Unit 7: FlashSystem V9000 storage provisioning  
Unit 8: IBM Spectrum Virtualize host integration  
Unit 9: IBM Spectrum Virtualize volume allocation  
Unit 10: IBM Spectrum Virtualize data reduction technologies  
Unit 11: IBM Spectrum Virtualize Easy Tier  
Exercise 3: Managing external storage resources  
Exercise 4: Windows host definitions and volume allocations  
Exercise 5: AIX host definitions and volume allocations  
Exercise 6: Linux host definitions and volume allocations  
Exercise 7: Thin Provision and Volume Mirroring  
Exercise 8: Easy Tier Hybrid pool implementation

### Day 3

Unit 12: IBM Spectrum Virtualize data migration  
Unit 13: IBM Spectrum Virtualize FlashCopy and Consistency groups  
Unit 14: IBM Spectrum Virtualize Transparent Cloud Tiering  
Exercise 9: Easy Tier and STAT analysis  
Exercise 10: V9000 data pool migration  
Exercise 11: Migrate existing data with Import Wizard GUI  
Exercise 12: Migrate existing data with Migration Wizard

### Day 4

Unit 11: IBM Spectrum Virtualize remote data replication  
Unit 16: IBM Spectrum Virtualize administration management  
Exercise 13: Migrate existing data with Import Wizard CLI  
Exercise 14: Real-time Compression and IBM Comprestimator  
Exercise 15: FlashCopy and consistency groups  
Exercise 16: FlashCopy snapshot monitoring user roles and access  
Exercise 19: Snapshot to the Cloud  
Class review and evaluation

## Audience:

This lecture and exercise-based course is for individuals who are assessing and/or planning to deploy IBM System Storage networked storage virtualization solutions. Typical students may include:

- Customers
- Technical IBM personnel
- Business Partner technical personnel
- IT consultants and architects