Course Objective

This course is designed to introduce to the participants, the fundamentals of Network Storage technologies, focusing on Storage Area Networks (SAN) and Network Attached Storage (NAS). This course provides an in-depth knowledge of SNIA Concepts / EMC Symmetrix VMAX Storage Configuration management. And also this course imparts knowledge of Brocade SAN switch / Director Configuration and its techniques. Various disaster recovery methods, consolidation of storage and SAN management hierarchy, The SAN infrastructure facilitates storage consolidation.

EMC Symmetrix VMAX Configuration Management

Day1

Part 1: FUNDAMENTALS OF STORAGE NETWORK FOUNDATIONS
- DAS/SAN/NAS concepts
- SCSI & iSCSI
- FCP, FCIP, IFCP and FcoE
- FCR configuration
- RAID concepts and Different Raid types

Part 2: FIBER CHANNEL
- Understanding Fiber channel protocol
- Fiber channel Layers
- Fiber channel components
- Fiber components Channel topologies & Addressing
- Fabric topologies
- Identify SAN

Part 3: INTODUCTION TO EMC Symmetrix/DMX/VMAX SERIES
- Understanding various Models of EMC Storage arrays
- Understanding EMC Symmetrix Components
- Understanding DMX/VMAX components
- DMX/VMAX Architecture
- Device configurations and Management
- Symmetrix/VMAX Architecture
- Symmetrix/VMAX Basic configurations
- Mirror Positions
Day 2

Part 4: SYMMETRIX MANAGEMENT Allocation Process
- Lun allocation Process using EMC tools
- Meta Lun configurations
- Device Attributes
- LUN mapping concepts
- Lun unmaping from FA directors concepts
- Lun Reclamation Process
- Differences between SMC and the Solutions Enabler command line interface
- ACLX Usage in VMAX
- Gate keeper device concepts and configurations
- Concepts of Symcfg and symconfigure
- Types and uses of Devices and Meta Volumes
- Port characteristics of a directors
- Purpose of masking devices
- Use of HBA flags set with symaccess and how they work with port
- Provisioning groups

Day 3

Part 5: SYMMETRIX CONFIGURATION MANAGEMENT
- Hardware components in the host to Symmetrix I/O Path
- Storage Group configurations
- Initiator group configurations
- Port group configurations
- Maskview configurations
- Thin Provisioning concepts
- Virtual provisioning and Auto Provisioning
- FAST and FAST VP configurations
- LUN Masking and view concepts
- Thin Pool configurations
- pool oversubscription
- Data dev and Tdev configurations

Day 4

Part 6: SYMMETRIX BUSINESS CONTINUITY MANAGEMENT
- TimeFinder/Clone theory of operations and its application
- BCV/Mirror concepts
- Save Pool Configurations
- TimeFinder/Snap theory of operations and its application
• SRDF/S theory of operations and its application
• SRDF ACP mode of Operations
• Consistency Group configurations
• R1/R2 Device Configurations
• SRDF/A theory of operations and its application
• R11/R21/R22 Device configurations
• COFW operations in TF
• Copy Operations

Part 7: BROCADE/ CISCO FC SWITCHES ADMINISTRATION
• Basics of Brocade and cisco Switch models
• Identify Switch capabilities
• Identify WWN, Port IDs, and Domain Ids
• Zoning Configurations
• VSAN/VFAB Concepts
• Switch Parameters
• Use Management Tools

Day 5

Part 8: EMC DMX/VMAX Migrations and Troubleshooting
• Concepts of Open Replicator.
• Concepts of PPME configurations
• SRDF ports configurations and migration process
• OR Hot Pull/Push
• OR Cold Pull/Push
• Overview of Host based migrations
• VMAX Basic troubleshooting
• VMAX copy services troubleshooting.
• Host based migrations Process and Troubleshooting.
• FAST VP and Thin Pool Troubleshooting