Storage Networking Management/Administration

Course Summary

Description

This course will cover Fibre Channel specific topics for the day to day management of a storage networking environment and data center however will not cover basic concepts and technologies. It provides the knowledge required to manage and administer a Storage Area Network.
This course will prepare you to take the SNIA FC-SAN Storage Management/Administration (S10-200).

Objectives

At the end of this course, students will be able to:

- Identify steps or criteria for planning future growth of a Fibre Channel SAN
- Identify steps for storage allocation in a Fibre Channel SAN
- Create storage layouts using partitioning, protected data, security as criteria
- Identify criteria for planning connectivity
- Create implementation policy objectives
- Determine port assignments

Topics

- Network Administration
- Applied Fibre Channel Protocol (Change Management)
- Performance
- Storage Networking Management
- Business continuance
- Backup and Recovery
- Fibre Channel Security

Audience

This course is designed for those who need to implement and manage a fibre channel storage area network.

Prerequisites

Students should take ProTech's Storage Network Foundations class before attending this course.

Duration

Two days

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Course Outline

I. Network Administration
- A. Identify steps or criteria for planning future growth of a Fibre Channel SAN
- B. Identify steps for storage allocation in a Fibre Channel SAN
- C. Create storage layouts using partitioning, protected data, security as criteria
- D. Identify criteria for planning connectivity
- E. Create implementation policy objectives
- F. Determine port assignments

II. Applied Fibre Channel Protocol (Change Management)
- A. Given a scenario, where the environment changes, identify steps needed to bring the environment back to a controlled situation.
- B. Given a scenario, troubleshoot a change management situation
- C. Given a scenario, analyze port log-in, fabric log-in and process log-in

III. Performance
- A. Given a scenario, assess the performance of a network storage environment
- B. Given a scenario, develop and follow steps for problem resolution
- C. Given a scenario, Identify potential bottlenecks
- D. Identify the performance implications on the fabric involving RAID, caching and connectivity configurations
- E. Establish baselines for performance
- F. Monitor performance and throughput of storage device ports
- G. Monitor performance and throughput of ISLs (Inter Switch Links)
- H. Determine the impact of replication techniques on local and remote fabrics
- I. Given a scenario, identify steps in performance problem analysis

IV. Storage Networking Management
- A. Given a scenario, optimize redundancy within a switched environment
- B. Identify HBA configuration parameters
- C. Given a scenario, determine methodologies or tools to troubleshoot volume management issues
- D. Identify steps to add a configured switch to an existing fabric
- E. Determine reasons to add or remove ISLs (Inter Switch Links)
- F. Identify the processes that occur on a switch during a fabric merge
- G. Given a scenario, calculate storage network device latency and propagation delay
- H. Identify performance considerations of fan-in, fan-out
- I. Identify ISL over-subscription advantages and disadvantages
- J. Identify the distance limitations between long-wave and short-wave Fibre
- K. Create/modify zone sets
- L. Identify steps to make a LUN visible to specific host HBAs (LUN Mapping) and its implications on the fabric (SMI-S specified)
- M. Identify the possible zoning conflicts that could cause fabric segmentation
- N. Determine methodologies or tools to troubleshoot zoning issues
- O. Given a scenario, show the tasks involved in monitoring and adhering to capacity planning processes

V. Business Continuance
- A. Identify methods for Implementing business recovery solutions using Fibre channel extension
- B. Identify components that should be used as part of a business continuance solution
- C. Given a scenario, identify information protection solutions using Fibre channel
- D. Identify steps to implement clustering in order to prevent single point of failure

E. Given a scenario, demonstrate how to perform data transfers/migrations/ replications

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Course Outline (cont'd)

VI. Backup and Recovery

A. Identify steps to restore Data from Backup
B. Identify performance bottlenecks and how to correct them as it pertains to backup and recovery
C. Given a scenario, analyze backup configuration to identify potential problems
D. Determine database components and configurations to satisfy a backup and recovery solution
E. Identify steps to track error logs within the operating system for backup and recovery messages

VII. Fibre Channel Security

A. Implement port authentication protocols
B. Identify steps to secure a fabric
C. Identify the differences between Hard and Soft Zoning with respect to Security
D. Identify steps to configure secure management access to Fibre switches