SNIA Architect – Assessment, Planning & Design
(S10- 300) Exam Description

This exam will test the candidate's knowledge of assessments, planning and design from a storage networking perspective. This exam will validate that the successful candidate can architect a solution leveraging industry best practices and standards including ITIL (Information Technology Infrastructure Library) and ITSM (IT Service Management) principles. This test will not cover basic concepts and technologies.

This test is designed for the Solutions Architect who examines data and information requirements from a business perspective and responds with a solution, defined as a hardware and software architecture that meets the requirements.

In a sales engineering role, they prepare technical architecture implementation strategies and plans and apply new technologies.

In an architect or storage engineering role, they prepare detailed implementation plans in association with and for execution by implementation specialists.

The solution architect has broad knowledge of Storage concepts, interoperability of storage networking with detailed implementation knowledge. They also can design best storage practices in the context of a client's infrastructure.

Suggested pre-requisite exam: SNIA Storage Network Foundations (S10-100)

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Topic: Assessment
Determine topology issues relevant to solution-focused design, including fabric, loop, and point-to-point. (SAN)
Determine disaster recovery issues relevant to solution-focused design.
Determine high availability issues relevant to solution-focused design (e.g., SAN redundancy, SAN failover, load balancing, quality of connection)
Determine the performance issues relevant to solution-focused design (e.g., random access, sequential access, fan-in/fan-out ratios, etc.).
Determine LAN-free/server-free issues relevant to solution-focused design (e.g., LAN Free/Server free, HSM backup configurations and strategy, etc.)
Assess the existing infrastructure prior to designing an FC SAN solution. Consider bandwidth, throughput, resilience, redundancy, compatibility, scalability, protocol (FICON, SCSI, and IP) and extended fabrics.
Assess existing hardware and software prior to designing a SAN or NAS solution. Consider OS and platforms, storage [tape/disk/raid], application and management software.
Assess distance limitations prior to designing a SAN or NAS solution.
Assess current storage prior to designing a SAN or NAS solution
Validate the design of SAN solutions (e.g., given a proof of concept).
Evaluate and specify hardware capabilities and software functionality to be used in SAN or NAS architectural solutions
Perform needs assessment and determine Gap Analysis Solution by leveraging ITIL and ITSM principles
Document the impact of I/O bus, HBA and storage directors on system performance leveraging ITIL
Document risk acceptance criteria leveraging ITIL.
Verify a user's capacity plan requirements work by sizing a new storage array
Assess the existing infrastructure prior to designing an IP SAN solution. Consider bandwidth, throughput, resilience, redundancy, compatibility, scalability, protocol (FICON, SCSI, and IP) and extended fabrics.

Topic: Planning

Plan for storage and server consolidation

Create Capacity Planning processes and procedures for a SAN solution

Build and document operating procedures for implementing storage solutions

Build and document a job flow sequence for managing backup strategies

Create a checklist to call out the procedures for the data management life cycle (architecture, planning, design, and implementation from pre-sales to post-implementation)

Develop principles of working within the data center to facilitate efficient and error free operations

Plan architecture solutions for scalability.

Plan architecture solutions for capacity, including throughput / bandwidth

Plan architecture solutions for interoperability

Plan architecture solutions for security (e.g., LUN mapping, LUN masking, persistent binding, soft and hard zoning, etc.).

Plan FC SAN solutions to accommodate heterogeneous or homogeneous operating systems.

Plan for the manageability of the SAN or NAS infrastructure.

Plan SAN and NAS models (e.g., mesh, star, and hybrid configurations, core / edge, two-tier / three-tier, 2Gb / 1Gb ports, hubs / switches / directors).

Plan migrations to FC SAN solutions (interconnecting devices, from existing infrastructure to a new design).

Create Capacity Planning processes and procedures for a NAS solution

Plan IP SAN solutions to accommodate heterogeneous or homogeneous operating systems.

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Topic: Design

Design high availability strategies

Design a storage area network within such constraints as financial, performance, hardware, connectivity, physical building limitations (leveraging ITIL and ITSM principles)

Design a backup and recovery strategy

Design and document disaster recovery solutions

Demonstrate knowledge of Storage Management Design (and the design characteristics of a standard -e.g., SMI, shared storage model)

Given a scenario, design logical recovery strategies

Design fault tolerant solutions and strategies

Design failover solutions

Design clustering systems solutions

Define the steps to make a volume usable through a SAN

Design disk recovery methods

Design database to storage layout strategies

Design a NAS solution, defining the impact on local and wide area network topologies

Topic: Problem Resolution and Troubleshooting

Create QA strategy and procedures (leveraging ITIL)

Manage an error free operation through measurement criteria that are quantifiable (leveraging ITIL)