

Storage & SAN Fundamentals

Duration: 2 Days

Level: Beginner

Audience: Freshers / IT Support / Storage Engineers

Day 1: Storage & Networking Fundamentals

Module 1: Introduction to Storage

- What is Data Storage?
- Importance of Storage in IT Infrastructure
- Evolution of Storage Technologies
- Overview of Modern Data Centers

Module 2: Storage Fundamentals

- Types of Storage:
 - Direct Attached Storage (DAS)
 - Network Attached Storage (NAS)
 - Storage Area Network (SAN)
- Comparison: DAS vs NAS vs SAN
- Use Cases & Industry Applications

Module 3: SAN Fundamentals

- What is SAN?
- SAN Architecture Overview
- Key Components:
 - Hosts
 - Storage Arrays
 - Fabric
- Benefits of SAN in Enterprise Environments

Module 4: iSCSI Fundamentals

- What is iSCSI?
- iSCSI Architecture & Components
- Initiator & Target Concepts
- IP-based Storage Communication
- Basic Configuration Workflow

Module 5: SAN Switching & Infrastructure

- SAN Switches vs Directors
- Role of Switches in SAN
- Basic Configuration Concepts
- Zoning Overview (Introduction)
- High Availability in SAN Switching

Module 6: SAN Topology & Fabric Design

- SAN Topologies:
 - Point-to-Point
 - Arbitrated Loop
 - Switched Fabric
- Fabric Concepts:
 - Single Fabric vs Dual Fabric
- Redundancy & Best Practices

Module 7: Data Network Fundamentals (NAS Protocols)

- Introduction to File-Based Storage
- CIFS/SMB Protocol:
 - Use Cases
 - Basic Working
- NFS Protocol:
 - Use Cases
 - Basic Working
- Comparison: Block vs File Storage

Module 8: Flash Storage Fundamentals

- What is Flash Storage?
- SSD vs HDD Comparison
- Types of Flash (SLC, MLC, TLC, QLC)
- Benefits of All-Flash Arrays
- Performance Considerations

Module 9: Cloud Storage Fundamentals

- Introduction to Cloud Computing
- Cloud Storage Models:
 - Object Storage
 - Block Storage
 - File Storage
- Public vs Private vs Hybrid Cloud
- Basic Cloud Use Cases

Learning Outcomes

By the end of Day 1, participants will:

- Understand core storage concepts (DAS, NAS, SAN)
- Gain foundational knowledge of SAN and iSCSI
- Identify different storage protocols and architectures
- Understand basics of flash and cloud storage