# Cloud Storage – The New Paradigm for Storage Technology

## Skills and expertise to help you increase your knowledge in the field of storage technologies

TLC Education and Training Services

### Course Highlights

Training will be delivered by an experienced trainer with 25+ years of career experience imparting education and training services both locally and internationally and have served international enterprise technology vendors including IBM, Fujitsu, and ICL.

Our instructor holds various industry professional certifications in the space of enterprise servers and storage technologies, Information Security, Enterprise Architecture, ITIL, Cloud, Virtualization, Green IT, and a co-author of 10 IBM Redbooks.

The training course flow will be a mix of lectures & classroom discussions so that participants can have a detailed understanding of various components of Storage technologies discussing different sales scenarios.

The storage training course is vendor neutral and it makes the attendee completely familiar with lot of technologies surrounding storage and various complex issues and solutions thereof due to explosive growth of data.

Often people take training courses on storage products ranging from Storage switches to Arrays to Tape Devices to Storage Virtualization appliances. However, few of them really understand the gamut of storage technologies that made those products. As a result, there is an acute shortage of people in the storage market who has a holistic understanding of the storage capabilities and how they relate to each other.

### Prerequisites:

Participants attending this course should be familiar with basic Information Technology (IT) concepts and the role of general storage systems technology.

This two-day online instructor led workshop is designed to develop storage technology skills and strategies associated with managing the explosive growth of business data across the enterprise in today's networked economy.

In this course we will be discussing what is a storage area network? What are the benefits and pitfalls of installation? How can a SAN fit into your organization? These questions and more are answered in this Storage Area Network course.

### Unit 1 – Cloud Defined

- Cloud Computing Defined.
- Understand Service Oriented Architecture (SOA) and Web Services.
- Describe Representational State Transfer (REST) Architectural.
- Technologies that Enable Cloud Computing.
  - Virtualization, Hypervisor, Provisioning, Orchestration, Security, and Lifecycle Management.
- Understand three Cloud Service Models & their details.
- Describe Cloud four Deployment Models with Several Variations and their details.
- Clients are moving workloads to cloud.
- Application Readiness with respect to Cloud.
- Cloud solution to common IT problems & challenges.
- Common terms & phrases related to cloud solutions.
- Cloud Architecture.
- Unit 1 Assessment.

### Unit 2 – Cloud Business Planning and Storage Challenges

- Understand the difference between Fault Tolerance & Fault Resilience.
- What is Business Resilience?
- Business Resilience Strategy and ISO 22301.
- The impact of Business Resilience and Data Protection.
- Cloud Business Planning.
- Business Value to Client – Cloud Adoption Workshop.
- Understanding IT and Cloud Governance.
- A view on Cloud Computing Reference Architecture.
- Real Business Challenges in Today's Storage World.
- Storage types and subsystems.
- Pressure on the senior IT management.
- Information infrastructure model.
- Information explosion – The growth.
- Reduce cost, minimize risk and improve services.
- Backup and restore strategy & solutions.
- Planning about new storage purchase – Some important storage sizing considerations.
- Critical facts about storage that you cannot ignore.
- Acquisitions and storage dynamics.
- Unit 2 Assessment

### Unit 3 - Storage Virtualization Fundamentals

- Virtualization Defined.
- Understand different forms of virtualizations.
- Understand why there is a need for storage virtualization.
- Storage Capacity Utilization – Expanding more for less.
- Desirable properties of storage virtualization.
- Understand Storage Virtualization.
- Understand Block-level and File-level virtualization.
- Virtualization – Industry wide definition.
- SNIA shared storage model.
- Problem solved by storage virtualization solutions – Thin Provisioning, Automated Storage Tiering & QoS.
- Solution offers by storage virtualization.
- The SNIA storage virtualization taxonomy.
- What does Storage Virtualization enable?
- Storage Virtualization Requires a Multi-Level Approach.
- Virtualization Architectures: In-Band vs. Out-of-Band.
- Key benefits of Storage Virtualization.
- Storage virtualization market leaders.
- Unit 3 Assessment.

*Opportunities are made, not found*

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## Unit 4 - Demystifying Software Defined Storage

- Understanding challenges associated with Digital Transformation.
- Why Software Defined Storage?
- SDS is more than storage virtualization.
- Software Defined Storage in the Context of the Software Defined Data Center.
- What is needed for SDS.
- Basic Building Blocks of SDS.
- Some of the key attributes of SDS.
- SDS as an integral component of the Software Defined Data Center.

- Key benefits of Software Defined Storage.
- Business Challenges solved by Software Defined Storage.
- Key characteristics of an Software Defined Storage.
- Types of Software-Defined Storage (SDS).
- Use Cases for Software-Defined Storage
- How SDS can help CSPs to attain their goals.
- Unit 4 Assessment.

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## Unit 5 - Exploiting the Role of Object Storage in Cloud

- Difference between Unstructured and Structured data types.
- What is an Object and Metadata?
- What is Object Storage?
- Understand Object Storage Concepts.
- Abstraction of Storage.
- Object Storage components.
- Key characteristics of Object Storage.
- Object Storage – Data Containers & Attributes.
- Components of Object Storage and understanding REST.
- Features and Benefits of Object Storage.
- Nine reasons Object Level Storage adoption has increased.
- Object Storage – Usage scenario with respect to Applications.
- Global Use Cases.
- Object Storage as a Scalable Cloud Storage Service.
- Global Object Storage vendors and their positioning.
- Unit 5 Assessment

## Unit 6 - Cloud Storage - The Way Forward

- What is Cloud Storage?
- Business benefits of using Cloud Storage.
- Knowing the Risks attached to Cloud Storage.
- Cloud Storage Initiative by SNIA.
- Understand Cloud Data Management Interface.
- What is driving the paradigm shift to Cloud Services?
- Review Attributes and Principles of Cloud Storage.
- Scalable On-demand Services Architecture.
- Cloud Storage Access Protocols and Types of Cloud Storage Models.
- Cloud Storage Types and their applications.
- Understand API and Cloud storage API protocols.
- Obstacles to establish connectivity to Object Cloud Storage.
- Understanding the Role of Cloud Storage Gateways.
- Protocols supported by Cloud Storage Gateways and Gateway features.
- Five capabilities to look for in a cloud storage solution.
- What are the negatives to cloud computing?
- Top Security Concerns for Cloud-Based Storage Services.
- Top 5 Cloud Storage Security Challenges.
- Data Protection in the Cloud.
- Cloud Seeding – It's a problem or a Solution?
- Pros to the use of Cloud Based Backup.
- Compliance in the context of Data Protection
- Technologies relate to Compliance
- Understand Data Retention and Disposition
- Monitoring, Auditing & Reporting and Best Practices.
- About General Data Protection Regulation
- Enterprise Cloud Storage Use Cases
- Cloud Enabling infrastructure technology.
- Unit 6 Assessment.

## Unit 7 - Disaster Recovery in the Cloud - SAN to SAN Replication

- Online Data Centers – Local and DR Sites.
- Focus on Feasible Region.
- Audited Data Centers – SAS 70, SSAE 16 and SOC Comparison.
- SAN Replication Choices.
- Advantages to the SAN Replications.
- Boot from SAN from replication perspective.
- Deduplicated Storage Devices and Data Replication.
- Using Auto Replication – Major points.
- Basic Replication – Using two options.
- Reciprocal Replication.
- Single to Multiple Replication.
- Multiple to Single Replication.
- Server Performance and Data Replication.
- SAN Auto Replication Features.
- Infrastructure required for Cloud based data replication.


## Detail Information

Course Code : TN167
Course Duration : 4 Day Online Instructor-led Workshop
Course Location : TLC office, Karachi and Customer On-site.
Terms & Conditions :100% payment in advance.
Course Deliverable: Comprehensive Student Guide and Course Certificate