**Lab 02: Block-level and File-level Storage**

In this lab, we setup and configured both a block-level (SAN), and a file-level (NAS) storage type.

**SAN**

Storage Area Network (SAN) is a block-based storage system. It is composed of a range of blocks from a shared storage, and is presented to the server as a logical disk. The blocks are partitioned and formatted on the server in order to store data as if it were stored locally on the hard disk. This method of storage has the benefit of high-performance, low latency, and a lower total cost of hardware. SANs are designed primarily for block storage inside databases, called structured data.

The SAN protocol Internet Small Computer System Interface (iSCSI) was used to manage the devices. iSCSI mounts the devices, managing communication of the block-level instructions between the device and storage controller. Commands are carried over the network, while providing security from unauthorised access.

An iSCSI target was created and configured, along with its initiator on the Client machine. The volume was formatted, then mounted. At this point, it could be accessed, with a follow-up issue of the “ls” command to confirm access.

**NAS**

Network-attached storage (NAS) is a file-based storage system. It enables multiple users and client devices to access data from a centralised disk via a network connection. This allows collaboration, which is particularly useful for work teams located in different areas. This method of storage has the benefit of ease of access, high capacity, and fairly low cost. It can support tasks such as archiving and backups. NAS handles unstructured data, such as audio, video, text files, and websites.

The NAS protocol Network File System (NFS) was used to share access to the files and folders within the shared volumes. An NFS share was created on NAS02, then mounted on the Client machine. To verify that the NFS share was connected, a folder was copied into the share on the Client machine, then accessed from NAS02.