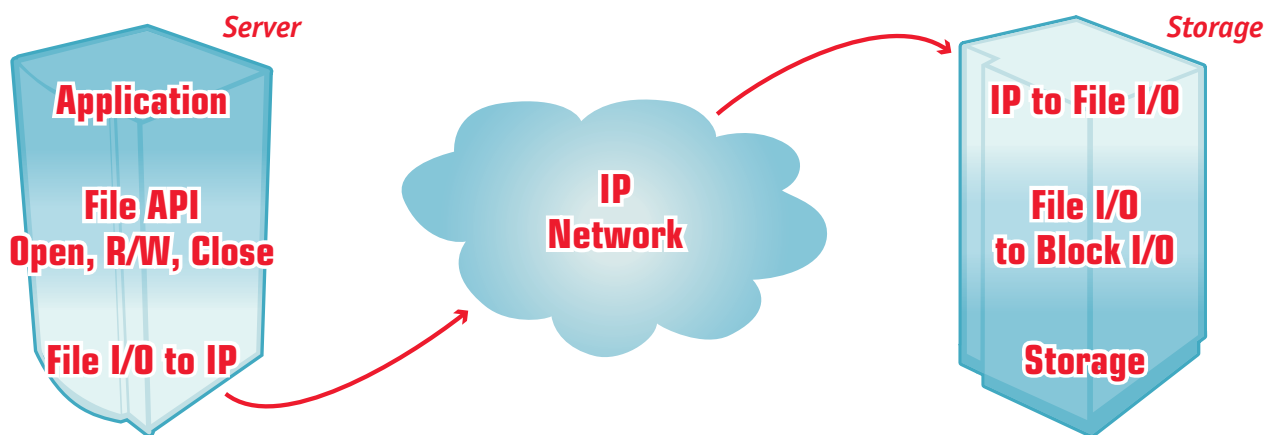


Value Proposition (cont.)

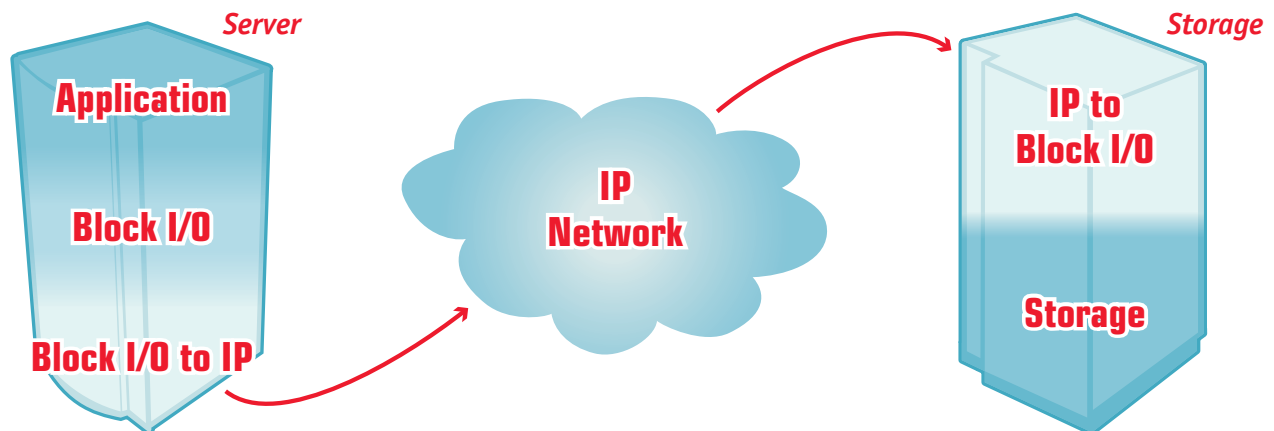
Both NAS and iSCSI utilize TCP/IP over Ethernet to provide access to various storage devices. NAS storage devices provide access to data on a file level. A NAS device usually runs an embedded operating system that enables the device to look like a mountable network device. Most NAS storage devices are capable of allowing heterogeneous file access to various kinds of servers. While performance is good with a NAS device, it is limited because the NAS device has to convert file I/O access to block I/O access when receiving information and convert block I/O access to file I/O access when sending information (see figure 1). Without NDMP, backup and restore operations of a NAS storage device require more time because more LAN traffic is generated. Backing up and restoring a NAS device capable of NDMP reduces network traffic, allowing for quicker backup and restore operations.

Figure 1 – NAS



iSCSI has many of the advantages of NAS devices such as reliability of IP infrastructure, pooled storage, data storage over long distances, etc. However, because iSCSI storage provides access to data on a block level, iSCSI devices are capable of running at higher data rates than NAS (See Figure 2). Many applications, such as databases, MS Exchange, Lotus Notes, banking, etc., change data on the block level. iSCSI storage is more optimized for these applications.

Figure 2 – iSCSI



Application Deployment

The combination of Ethernet and SANs include a number of configurations that are of interest to various users. While there are many potential applications for the iPBridge, this brief focuses on enabling SCSI storage and network tape backup.

The ATTO iPBridge has been optimized for network back-up operations:

- tested for interoperability with existing tape libraries and back-up applications.
- connects storage via Ethernet that can easily be incorporated into existing network infrastructures.
- offers backup flexibility through the NDMP and iSCSI protocols – the iPBridge can back up any storage on the network.

By employing the ATTO iPBridge, OEMs and System Integrators can work with their clients to allow multiple servers to share SCSI tape libraries over Ethernet networks. This offers many benefits to the end user:

- **Improves ROI:** Connects current tape libraries to network investment through the GbE and SCSI ports on the iPBridge 2500.
- **Increases productivity:** Allows access by many users to broader available storage, increasing storage utilization and availability.
- **Reduces Costs:** Centralizes administration.
- **Increased flexibility:** Access SCSI tape libraries attached to the bridge through NAS systems utilizing the iPBridge's NDMP capability or via ethernet systems utilizing the iPBridge iSCSI capability.
- **Improves efficiency:** Moves users toward a centralized storage scheme that is IP-based utilizing Ethernet as a storage network framework. Using the iSCSI protocol, legacy SCSI devices can talk to network-enabled tape libraries or other SCSI storage devices as if they were direct-attached devices.

