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Company: BAKER & BOTTS   Re: PROVISIONAL STORAGE ROUTER

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EXHIBIT
24   Hoese
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A-10-CA-217-LY

Network storage device with routing and security controls

Abstract

High speed serial interconnects provide the capability to attach a large number of high speed devices to a common storage transport medium over large distances. Existing storage transport mediums provide for a relatively small number of devices to be attached over relatively short distances. A storage router serves to interconnect these mediums, providing devices on either medium global, transparent access to devices on the other medium, routing requests from specific devices on one medium to specific devices on the other medium.

Existing computer workstations access storage either locally or through network interconnects. Local storage typically consists of a disk drive contained within, or locally connected to, the workstation. Access to local storage is though low level, block protocols mapping directly to the mechanisms used by the storage device, and consist of data requests with no specific structure. Security controls are not provided. Network interconnects provide access for a large number of workstations to storage on a remote server, which provides file system structure, access control, and other miscellaneous capabilities. Access to the data on the server is through protocols that map to the file system constructs implemented by the server.

The invention provides for a large number of computer workstations to be interconnected on a common storage transport, accessing a common data store through low level, block protocols. Access controls and routing are implemented such that each workstation has access to a specific subset of the data store, which has the appearance and characteristics of local storage. Methods are provided that allow for configuration and modification of the storage allocated to each workstation attached.
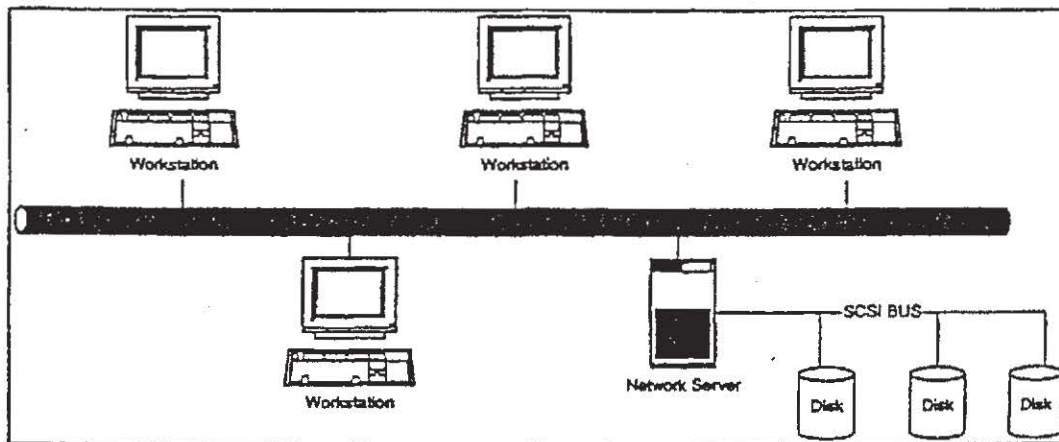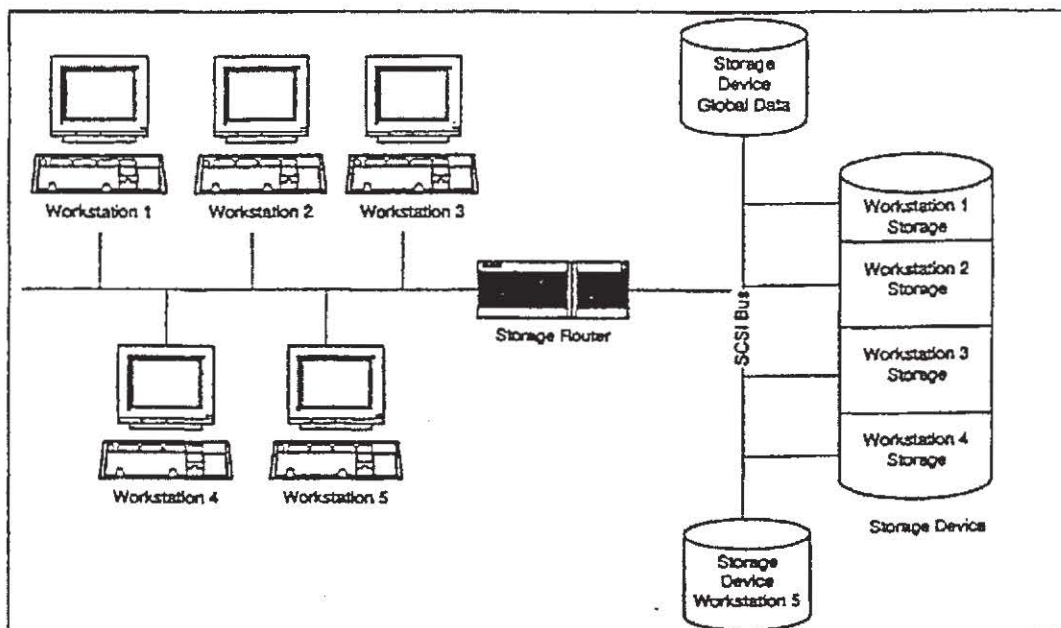
Drawing 1. Typical Network. Access to data storage is through server, which implements file system on disk and transfers data to workstations via high level file system protocols.

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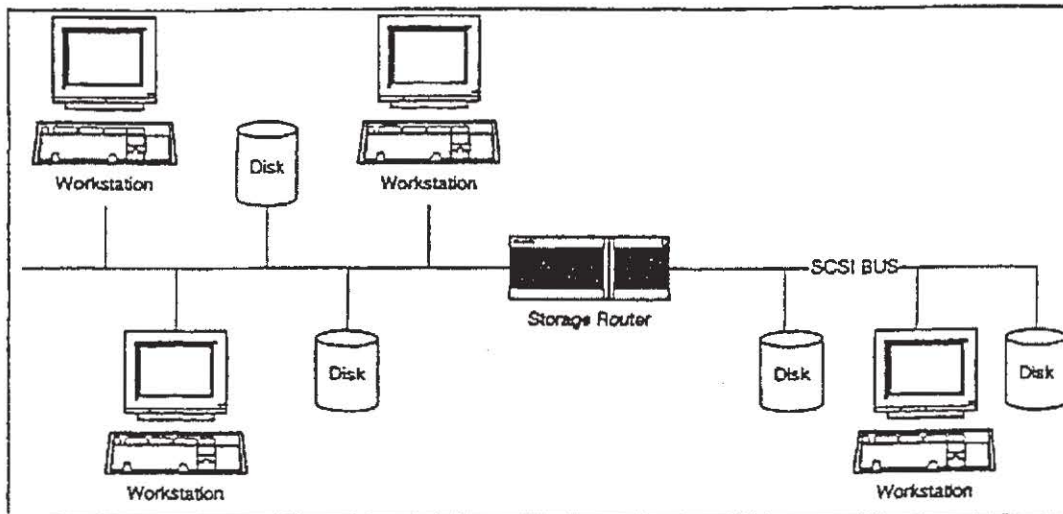
Drawing 2. Storage Network with global access and routing. Any workstation can access any storage device through low level block protocols.

Drawing 3. Network storage device with routing and security controls. Workstations access storage through low-level protocols, with the appearance and methods of local storage access. Access control is combined with routing in the storage router, such that each workstation has controlled access only to specified storage devices or section thereof.

Concept by Geoffrey Hoese, March 22, 1997. First draft May 15, 1997.

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Crossroads Systems Inc.

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