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Flash Research Assignment 2: Servers and Storage Technologies

There is nothing that impairs a firm’s ability to operate more than lost data. In the best-case scenario, a data-loss event requires a costly and time-consuming effort to restore and/or retrieve the data. Such efforts, of course, may not succeed. In the worst-case, a data-loss event may mean the failure of the firm; according to data published by the UK Department of Trade and Industry cited by IT donut, 70% of businesses that suffer a catastrophic data loss close permanently within 18 months (Knowlton, 2012). Data centers are vulnerable to crippling damage from a variety of causes, including natural disasters, weather events, fires, and increasingly physical attacks on critical infrastructure. Businesses must implement solutions that allow for uninterrupted operations, even in the wake of unplanned events that could potentially affect sizable metropolitan areas. Therefore, I propose that our company consider implementing *Wide-area SAN* technology.

*SAN (Storage Area Network)* technology is a well-established technology that allows organizations to store, transmit, and share data via networked devices. The key technology features of as SAN include redundant *fabrics* (hardware that connects workstations and servers to storage devices). These redundant fabrics prevent *single points of failure (SPOFs)* and ensure continuous system operation. SANs utilize *FC* (Fibre Channel) technology for transmitting data among devices connected via the fabric. Fibre Channel is especially suited for connecting computer servers to shared storage devices. SANs also make use of *multiplexing*, a process by which multiple signals can be sent over a single optical fiber. Multiplexing increases *bandwidth* (a.k.a. transistor rate), i.e. the amount of information that can be transmitted across the network.

In the event of a catastrophe that impacts the area surrounding critical business infrastructure (such as the data center), a *Wide-area SAN* supports data backup, recovery, and business continuity. The storage devices containing the firm’s critical data can conceivably be located anywhere in the world, or in multiple locations far from the catastrophe zone. This networked data storage scattered across a wide geographical area vastly reduces the risk of data loss associated with physical damage to the data center. According to Gartner’s Hype Cycle for Storage Technologies 2012, the core technology that underlies SANs is mature. A number of competing firms are developing new SAN technologies that both improve performance and lower the price of purchasing a SAN (2012).

References

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