

Avoid Hidden Costs in a Client / Server Environment

Sever hardware and workstation (client) hardware is not synonymous; each has its own, separate identity. Thus, workstation hardware, complete with server software, should not be utilized as a server. Although the initial cost of implementing a faux-server is lessened by following this practice, there are several concerns that are inevitable, forcing stress and finances to heighten in the future. The following are major reasons to avoid this situation:

- Lack of redundancy
- Capacity issues
- Scalability

The Reality of Shortcuts

Regardless of an organization's mission (bottom-line driven or not), its main focus is achieving it with as little stress and financial accumulation as possible. When technology is merely a business tool and not a necessity, technological short cuts may seem the apparent solution to curb large costs. Be warned that short cuts in the technology industry are rarely satisfying measures; short term benefits are often succeeded by excessive, more costly long term stresses and finances.

Server vs. Workstation

In a client/server environment, organizations implement a server to act as controller for its network- a practice which facilitates the organization's operations by hosting data, programs and devices to be shared on the network (not on the hardware) for all members to use. It is often labeled as the most expensive technology cost with suffice reason- it is a distinct computer designed to be optimal in the server environment. Server hardware is of high performance, which is needed for many of today's applications such as Exchange, Windows 2003, and Windows 2008. Hardware design features maximize reliability and durability essential to support the server to run for extended periods without interruption. To maximize uptime and availability, specialized

server hardware is utilized to ensure low failure rates. The specialized server hardware is then coupled with server-specific software.

Workstations are designed for individual users. Functionality of this front end computer is directed towards the display and manipulation of data. Servers are equipped with powerful CPUs for large amount of data processing, large RAM used to perform a heavy workload of necessary tasks, and faster hard drives, and memory; workstations can be built quite modestly based on the sizeable decrease in workload and functionality.

The Costs

With the hardware differences highlighted, it should be proposed that an organization should not implement a workstation to function as a server (despite efforts to install the appropriate server software). This would result in a workstation disguised, but not function, as a dedicated server. There are a number of reasons, including a lack of redundancy, capacity issues, and scalability concerns that lead to this conclusion.

Lack of redundancy

To maximize uptime, the server should function with high availability or run continuously; thus its hardware is built with redundant modules which provide back up even when hardware faults occur (power failure, etc.). Redundancy simply means that the machine is equipped with more resources than what is needed for normal operation. A few of a server's many redundant features employed to optimize the performance of your network are: power supplies, hard drives (RAID), the interface between peripheral components such as keyboards and printers and the operating system (BIOS: Basic Input/output System), and network cards which allow the machine to connect to a network.

Workstations are equipped to run in normal system operations; therefore it lacks the supplementary resources, leading to costly, interrupted operations. Some organizations opt to add some of these features to workstation hardware, however, this solution is expensive and time consuming. Accidents, software and hardware malfunctions, and power failures are inevitable, so anticipation and prevention are necessary.

Capacity Issues

To support heavy workloads and service to many users, the server hardware features large RAM; RAM stores applications and data that are in use so that it can be quickly accessed by the CPU. Storage is built in to accommodate such purposes and is designed to easily accommodate expansion and growth. The hardware incorporates components which support the ability to add new drives and to expand its current volumes onto additional drives. For example, the server's hot swappable drives allow external drives to be added without interrupting operation; RAID controllers and hard drive cages facilitate the ability to increase storage as well. Storage capacity is further increased by its ability to house from six to ten hard drives.

A workstation does not have the processor, motherboard and memory to adapt to a server environment as the manufacturer designed it particularly for front end purposes; the machine is intended only to run and manipulate the applications and can do so built modestly. Workstation hardware has limited capacity as it typically has space for only two to three hard drives. This lack of storage cannot be easily grown if needed, therefore leading to unnecessary projects that are costly in time as well as finances.

Scalability

Servers have the capacity to handle a large number of users. A workstation will approach its limit rather quickly. For instance, a server often has up to twelve memory bays - the space for storage devices - which allow servers to hold much more memory than a workstation. Small organizations have argued that a workstation can accommodate its size; however, all businesses crave growth. A workstation dressed as a server cannot be used to help an organization to do so. At some point as the organization experiences either growth in number of users or amount of data, the machine will fail in efficiency. As mentioned in the topic of capacity, the lack of expansion space and location of hard drives forces the workstation to be completely replaced, requiring the project to essentially be re-done. The cost of this second project could have initially paid for most of the server.

Be Proactive

Fortunately, these costly issues can be avoided. Make the investment in a true server that will protect your organization in hardware faults, provide appropriate storage capacity, and has the ability to grow with your needs. The initial investment will provide lasting benefits by supporting your network and increasing uptime and productivity, positively impacting your mission. The WorkSmart team will install the server and provide proactive solutions to maintain your system; our mission is to work closely with clients and partners to enable their success and to create an invigorating and enjoyable work environment. To reduce risk and cost, WorkSmart offers an array of services and solutions such as ManagedShield managed services solution, onsite and helpdesk support, hourly service plans, and DataVault offsite backup.



Additional Resources on this Topic

- Advanced Windows Small Business Server 2003 Best Practices
- Networking Articles & Tips for Windows Server 2003, 2008 & Vista- “Networking Basics: Part 4- Workstations and Servers”
- Dummies.com- “Components of a Server Computer”
- Communication News Online- "So You Think You Know Client/Server"
- PCMAG.com- “Sticking With Tradition: Workgroup Server and Outsourcing Options”