

Evaluate if Server-Based Computing Is Right for You

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Despite higher capital costs, server-based computing could be the best computing environment for you.

ANALYSIS

Too many CIOs focus predominantly on capital expenditure when they look to reduce the costs associated with their enterprise computing environments. Such bias against capital investments can push many organizations into adopting the capital-cost-conscious distributed PC computing model — whether that's the most appropriate or efficient computing model for them or not. This phobia of capital costs can also translate into a bias against server-based computing, which, despite its higher capital costs, may actually be the best computing environment for some companies, possibly including yours.

The Trade-Offs Between Thick and Thin

In the distributed PC, or thick, computing model — which is the predominant style of network computing — software is maintained at the PC level, giving individual users the freedom and flexibility to load their own software, customize applications and more easily take those applications with them when on the move. However, by allowing this freedom and flexibility, an organization introduces a significant amount of cost and complexity if those systems go unmanaged. This is because PC computing models involve indirect costs (for example, lost worker productivity) and risks (such as maintaining security) that most organizations don't account for in their total cost estimates. And for many organizations, having unmanaged and fully configurable PCs (often referred to as "open" or "unlocked" PCs) is the most common configuration.

Enter server-based computing, a thinner-client computing style that puts the applications back onto the server where they can be managed centrally, more securely and at a lower total cost. The server-based movement originated in the mid-1990s with a vendor called Citrix Systems, its MetaFrame product and Citrix's back-to-the-mainframe-only better approach. Since that time, Microsoft has also entered the ring with its own server-based computing offering, Windows Terminal Services, and the market will continue to grow.

Unlike PC computing, in which indirect, administrative costs add up, server-based computing is characterized by higher — and more visible — capital costs (see "How to Choose Between Thick- and Thin-Client Architectures" by Mark A. Margevicius). This glaring real money requirement usually catches the eye of CIOs, causing them to prematurely rule out the server-based computing model. But from an overall total cost of ownership (TCO) perspective, server-based computing is often less expensive than the distributed PC model.

Thus, cost analysis should be an important step in your choice between a traditional desktop-based platform and a server-based computing platform. Using Gartner research as a tool, organizations can compare the TCO of a traditional desktop environment (at several different management levels) and a Windows-based terminal environment (see "When Thin Clients Can Narrow Your TCO" by Mikako Kitagawa, Mark A. Margevicius and Michael A. Silver). However, you should not select your computing platform based on TCO alone; factor in business requirements as well. For example, more-compelling downsides of server-based computing result not from cost but from the challenges that server-based computing can pose to an organization's network architecture and deployment of applications.

This Spotlight examines many of the considerations of the server-based model to help you to determine if a centrally managed computing environment is right for you.

Server-Based Computing Options

Once you've decided on server-based computing, you'll need to estimate the server sizing and scalability requirements. Recognize that the server side of thin-client computing environments

can be constructed of a variety of server architectures: many small servers (blade or rack-optimized) or fewer large servers (with virtualization or partitioning). Rather than engaging in heated debates on which is the "right" architecture, focus on the hard issues that drive the size and capacity of the server infrastructure, such as application behavior, user behavior and user concurrency (see "Thin-Client Computing Dictates Fat-Server Infrastructure" by John Enck and Mark A. Margevicius).

Additional options exist. The No. 1 question that Gartner receives from clients investigating server-based computing pertains to the choice of Microsoft Terminal Server vs. Citrix MetaFrame XP Presentation Server. While both products offer baseline server-based computing functionality, several differences exist. In "Microsoft Windows Terminal Server vs. Citrix MetaFrame" by Federica Troni and Mark A. Margevicius, we compare the strengths and challenges of Terminal Server and MetaFrame and shed light on a few lesser-known alternatives.

Choices can be made at the hardware level as well. Although server-based computing usually entails a system in which the PCs receive applications from a server or servers, in some situations, other end-user devices can be advantageous. Specific types of organizations will benefit from thin-client hardware devices and mobile thin-client devices at the receiving end (see "Thin-Client Hardware Choices Abound" by Mark A. Margevicius and Martin Gilliland).

At the microprocessor level, thin-client computing environments involve a different set of microprocessor requirements than do thick-client, PC-based computing environments. Chip makers, thin-client suppliers and enterprise customers all need to ensure that they make special considerations for server-based computing at the processor level. Chip companies seeking to supply the thin-client market need to offer a platform that is viable for several years and must provide low-power, low-cost microprocessors that offer adequate performance. Likewise, thin-client suppliers and organizations planning to adopt the server-based computing model should evaluate a wider set of microprocessor suppliers than just those that serve PC manufacturers (see "Thin Clients Have Unique Microprocessor Requirements" by Joseph Byrne).

And there are application development considerations — that is, when do you write for thin-client environments vs. thick, and more specifically what type of thin-client environment is best for your organization. Organizations considering thin-client application architectures must choose between two broad deployment models: a server-based model that will provide a user interface that is rich vs. a Web-based one that provides relatively painless scalability, or reach, to diverse, dispersed user masses (see "Thin-Client Architectures Are a Matter of Rich vs. Reach" by Mark Driver).

Another issue organizations will need to address is what licenses are required in the Windows and Citrix server-based computing environments. Microsoft's "Licensing Product Use Rights" document is a long, confusing manual, and Microsoft customers will need additional help to determine the most effective, most efficient and compliant server configurations and licensing agreements for their organizations and business partners. Citrix customers working in a Windows environment will need to understand not only the Citrix licensing scheme but must ensure that all necessary Microsoft licensing is in order as well (see "Citrix Licensing Basics in a Windows Environment" by Alvin R. Park and Mark A. Margevicius and "Windows Server-Based Computing Licensing Basics" by Alvin R. Park and Mark A. Margevicius).

Security is an important issue to look at when considering server-based computing as well. While server-based computing has some security risks, it has the advantage of closing more risks than it opens. Areas where server-based computing can minimize an organization's security-related risk and hassles include: patch management, local data exposure, local application exposure, session monitoring and shadowing, backup and synchronization of critical data, and corporate LAN exposure to malicious code (see "Client Security Considerations for Server-Based Computing" by John Girard).

Server-based computing is one of several types of IT architectures that organizations can employ to address their application needs. However, implementation of this computing model requires effort, due diligence, certification, testing, planning and budgeting. This Spotlight provides the information and perspective that organizations will need to decide whether server-based computing is right for them — and the guidance they'll need en route to a successful server-based computing deployment.

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