Recent developments such as remotely accessed, centrally hosted, virtual PCs are breathing new life into thin client as a desktop computing option. While thin clients are still far from displacing traditional “fat” PCs, older approaches to thin client – such as traditional Citrix and Terminal Services solutions – are clearly being displaced.
Executive Summary

Traditionally, enterprises deciding to deploy thin client technology have turned to Server-Based Computing (SBC) models, such as Citrix Presentation Server and Microsoft Terminal Services. New thin client processing models are creating new interest in thin client. These models include:

» Virtual Desktop Infrastructure (VDI).
» Operating System/Application streaming.
» Remote access blade PCs in the data center.

With its large existing install base, SBC style solutions will be around for some time to come. However, future growth in thin client deployment will likely be driven by these new models.
**Trend Point**

Info-Tech sees the strong trend away from last-generation solutions and towards next-generation innovation as a key factor in driving higher adoption rates in thin-client computing. Producers of end-user devices (HP, Pano Logic, Wyse, etc.) are working to address end-user resistance by improving graphics capability, multimedia experience, and overall functionality. Producers of back-end technology are also introducing new solutions for supporting thin client deployments. These include:

» **Virtual Desktop Infrastructure (VDI).** PC operating systems and software are installed on virtual machines hosted on data center servers and accessed from thin client terminals over high speed network connections.

» **Operating System/Application streaming.** Operating systems and/or applications are packaged and delivered on demand to desktops (including thin clients) or hosting servers.

» **Remote access blade PCs in the data center.** A PC in the form of a blade is hosted in a data center blade chassis and accessed from a desktop terminal.

In the past, enterprises that have gone the thin route have leveraged Presentation Virtualization technology for their back end. This includes Citrix Presentation Server (recently renamed XenApp) and Microsoft Terminal Services. For a breakdown of the different virtualization layers, refer to the ITA Premium research note, "Peeling the Virtualization Onion without Tears."

**Situation Analysis**

Intel recently performed a study in conjunction with ChannelWeb entitled, “Emerging Compute Models & Their Status in the Market,” to gauge the interest level in new, thin compute models. They began by looking at the awareness level of respondents with terminal services. In this study, the term “terminal services” includes both Microsoft and Citrix solutions.

Terminal services is the most common, and thus far, the most popular technology used as an alternative to traditional fat clients. While 96% of respondents are aware of the technology, less than one third are using it in high-volume production (see Figure 1). This is fairly typical of uptake for thin client technology.
More interesting are the results regarding deployment plans for the next two years as seen in Figure 2. Clearly enterprises that are interested in deploying thinner compute models are looking beyond last-generation solutions. Only 2% of respondents are planning to deploy Presentation Virtualization-based solutions, suggesting all but a complete standstill in the potential growth for products like XenApp and Terminal Server.
Figure 2. Thin Compute Model Deployment Rates

Source: Intel and ChannelWeb

Info-Tech has seen very similar patterns in surveys of desktop virtualization intentions. Survey respondents were asked which forms of desktop virtualization they had deployed as well as which they were considering for deployment. The forms of desktop virtualization were defined as:

1. Presentation Virtualization (Terminal Services, Citrix, etc.)
2. Application Virtualization (SoftGrid, LanDesk, etc.)
3. Desktop Virtualization (VMware, etc.)

SoftGrid is a form of application streaming. Interest in PC blades was not addressed. In Figure 3, we see a much higher deployment percentage (56%) for Presentation than either of the other technologies (at 9% and 37%).
The high deployment rate is due to Presentation Virtualization’s longer history and current status as most popular back-end deployment option. However, the areas most indicative of the future of the technology are “Interested/Exploring” and “Planning to Deploy.” Here, Presentation Virtualization holds 25% of the respondents. Although Application Virtualization has a high percentage of respondents who indicated “Not Interested/No Plans,” the percentage of respondents who are interested or who are planning a deployment is still significantly higher (46%) than Presentation Virtualization.

When asked about their virtualization strategy, respondents reported fewer plans to deploy Presentation Virtualization (6%) than either Application or Desktop Virtualization (both 10%). Desktop Virtualization has a higher deployment rate, and yet it still manages to hold a 45% cut of future plans.

The 37% of respondents who have deployed Desktop Virtualization may seem higher than expected; however, the inclusion of VMware in the list of products classified as Desktop Virtualization may have influenced this number. Many enterprises are using VMware in a virtualized server deployment, rather than a virtualized desktop deployment. That said, the high rate of respondents who are exploring or planning to deploy Desktop Virtualization is evident in both Info-Tech’s and Intel’s numbers.
Info-Tech Predicts

1. Virtualization solutions such as VDI will be the key driver of thin client solutions going forward.

2. Traditional SBC models based on Presentation Virtualization (i.e., Terminal Services) will continue to be part of the landscape due to its installed base but will diminish in the future.

3. Vendors will increasingly diversify their thin client management options to incorporate new models. In recent months, for example:
   - Citrix’s acquisition of XenSource expanded its strategy into desktop and server virtualization. Citrix has also incorporated operating system/application streaming into its product set through the 2006 acquisition of Ardence (now called Citrix Provisioning Server).
   - With Windows Server 2008, Microsoft is reworking its licensing to accommodate virtual desktop environments. Microsoft is promoting System Center as a single point of management for terminal services, application virtualization (SoftGrid), and virtual PCs.
   - VMware acquired Thinstall, which indicates that it is aware that VDI alone is not the only thing holding people’s interests. This acquisition will give VMware specialization in application streaming managed separately from OS streaming.

4. Currently there is no evidence that thin clients are going to substantially change their market share against traditional PCs. Enterprises are aware the technology is available, and some are taking a more serious interest in deploying it. Certain environments, such as those that depend on graphic-intensive applications, will not achieve an optimal experience with thin client technology.

Bottom Line

Recent developments such as remotely accessed, centrally hosted, virtual PCs are breathing new life into thin client as a desktop computing option. While thin clients are still far from displacing traditional “fat” PCs, older approaches to thin client – such as traditional Citrix and Terminal Services solutions – are clearly being displaced.